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Health Report

FOR

The City of Perth

For 1925

BY THE

Medical Officer of Health

PERTH:
PRINTED BY D. LESLIE, 20 ST. JOHN STREET

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To the Honourable the Lord Provost, Magistrates and Members of the Town Council of the City and Royal Burgh of Perth.

Gentlemen,

I have the honour to submit my Twenty-seventh Annual Report upon the Health of the City of Perth for the year 1925.

As in previous years I have incorporated several Charts and Tables. These have been drawn up with every care and accuracy; and it is hoped, by their inclusion, to make the Report more interesting.

The mortality rate for the year is 13·3 per 1000—a figure which has only been excelled once, viz., in 1923, when it was 12·7 per 1000, and what is very gratifying is that the old age mortality (i.e. 65 years and upwards), accounts for no less than 44 per cent. of the total deaths. Last year the rate was 42·5 per cent. The infantile death rate was 81 per 1000 births as compared with 90 in 1924.

In my last Report I remarked that the City had been visited by the largest epidemic of Scarlet Fever of which I had knowledge. The epidemic continued throughout this year, more particularly during the first quarter, and the total number of cases reached 563, exceeding 1924 by 68 cases, and constituting a record in the annals of the City. Notwithstanding the number of the cases and the virulent nature of the disease in many cases, I am glad to report that the case mortality was only 1·9 per cent. and the death rate ·331 per 1000. On the other hand there was very little of other forms of notifiable infectious disease; and in the case of Diphtheria reaching the lowest level and constituting a record. The same remark applies to Phthisis.

During the year the City Hospital was recognised by the General Nursing Council for Scotland as a training school for Fever Nursing.

C. PARKER STEWART,
M.O.H.

Rockville, Barnhill,
Perth, April, 1926

Health Report for 1925.

AREA AND POPULATION.

The registration area, as given by the Registrar-General, is 3,134 acres, while I estimate the population at 33,200. This represents 10·5 persons to an acre. The additional acreage, due to the extension of the Burgh boundary in 1909, was 1,017 acres.

BIRTHS.

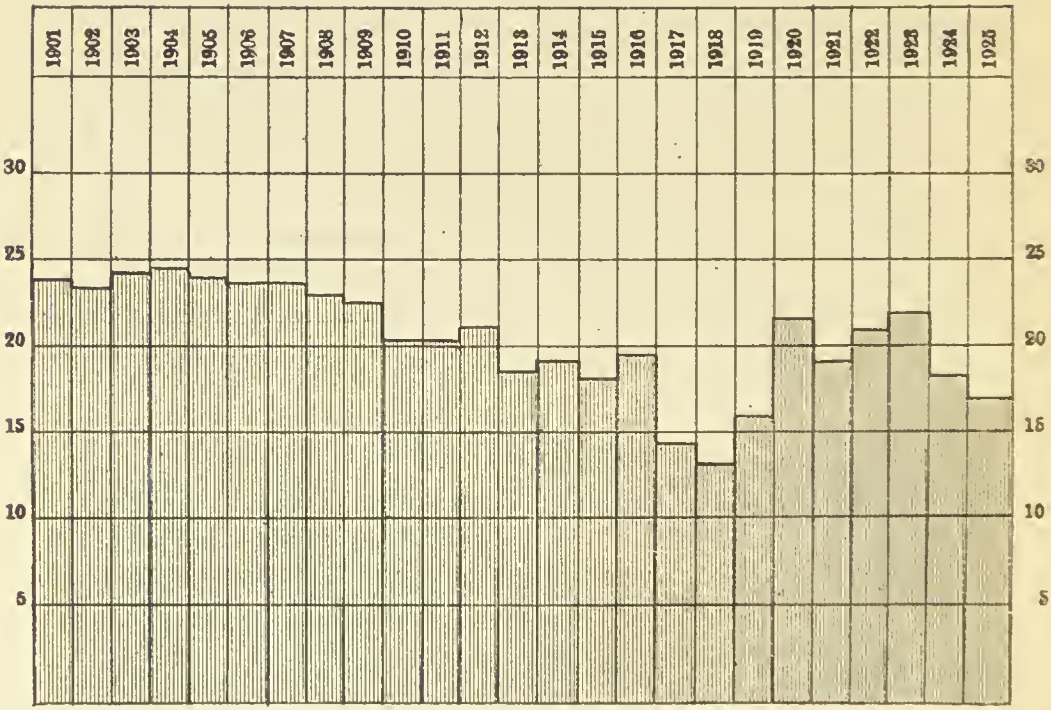
The Births registered in the Burgh during 1925 were 574. To this number has to be added 23 transcripts of children born outside of Perth, while 35 have to be deducted, leaving a total of 562 belonging to the City. This represents a birth rate of 16·9 per 1000 living, as compared with 17·9 in the previous year. Of these 574 births 285 were males and 289 were females, while, after allowance for transcripts, 41 were illegitimate. The proportion of illegitimate births to total births was 7·3 per cent., as compared with 7 in the previous year.

Table showing the Number of Births Registered during each Month of the Year 1925.

MONTH.	Male.	Female.	Total.	Illegitimate.
January, ...	21	24	45	4
February, ...	15	27	42	3
March, ...	25	22	47	3
April, ...	23	33	56	6
May, ...	21	33	54	3
June, ...	31	33	64	4
July, ...	28	15	43	3
August, ...	26	18	44	3
September, ...	20	22	42	2
October, ...	30	21	51	4
November,... ...	20	22	42	5
December, ...	25	19	44	2
Total, ...	285	289	574	42 or 7·3 %

An examination of the following Chart will show the steady decline which has taken place until the last few years. This declining birth-rate is a feature of all civilized races, and I stated in a previous Annual Report that I feared the upward tendency of the last year or two was not one which may be expected to continue. This has shown itself to be the case this year.

Chart showing the Birth Rate per 1000 in the City during the past 25 Years.



It will be noted from the foregoing chart how steadily the birth rate declined until 1918—in fact in 1899 the birth-rate was 28·1 per 1000 as compared with 12·8 per 1000 in 1918, a decline during a period of 20 years of 50 per cent.

It has been held that a high birth-rate is the natural result of prosperity, and that absence of prosperity is one of the chief causes of a low birth-rate. This probably does operate so to some extent, because of the fewer marriages which occur in non-prosperous times, but I am not inclined to think that this factor concerns our city very much.

The decline of our birth-rate is not due to increased poverty. It is associated with a general raising of the standard of comfort, and is an expression of the determination of the people to secure this greater comfort. Nor is the greater stress of modern life the cause so much as the greater desire for luxury.

When large families were the rule, and that not so long ago, the population increased in spite of epidemics and infant mortality. Science has combated these evils to some extent, yet the decline in our birth-rate continues—a decline undoubtedly due to a voluntary restriction of the birth-rate.

Restriction of the family began with the educated and professional classes, but now affects all classes of the community with the possible exception of the poor, and if domestic considerations are reasons for restriction among the upper classes, how much more are they among the lower classes where child bearing, nursing and rearing of children are of necessity tedious and full of anxiety and often at great sacrifice.

Whether restriction be right or wrong, in other words, moral or immoral, depends on the motive which prompts it, and the effects such restriction exerts on the welfare of present and future generations. If the motive is a selfish one such as freedom from the rightful responsibilities and burdens of normal married citizens, or without a thought of the interests of the next generation, then restriction is wrong.

On the other hand the motive may be a just one—the avoidance of ill-health and suffering of the mother—the avoidance of responsibilities owing to circumstances making it impossible to fulfil them. Thus it might be the want of proper environment or it might be a question of money, every additional child meaning more straitened circumstances for the family, and where the means are narrow a difficulty or even impossibility of obtaining the bare necessities of life.

At the same time, while there is wisdom in refusing to accept responsibilities which cannot be met, it must not be forgotten this purpose may easily pass into a timidity which shrinks from what might prove to be a sacrifice good for the character.

But there is another aspect. Parenthood ensures the maintenance of the race and the life of the nation, and so the question cannot be regarded as one of individual interest to be determined solely by personal inclination. But if the individual has a duty to the State so has the State, equally, a responsibility in discharging its obligations to the parents. It has been argued that the endowment of motherhood would discourage thrift and encourage illegitimacy if provision were made for the mothers and children on the same footing as for children born in wedlock. This is not my opinion. The birth of a healthy child and the maintenance of health in the child is a social service which the public are more and more recognising, and for which, where necessary, the State must make provision.

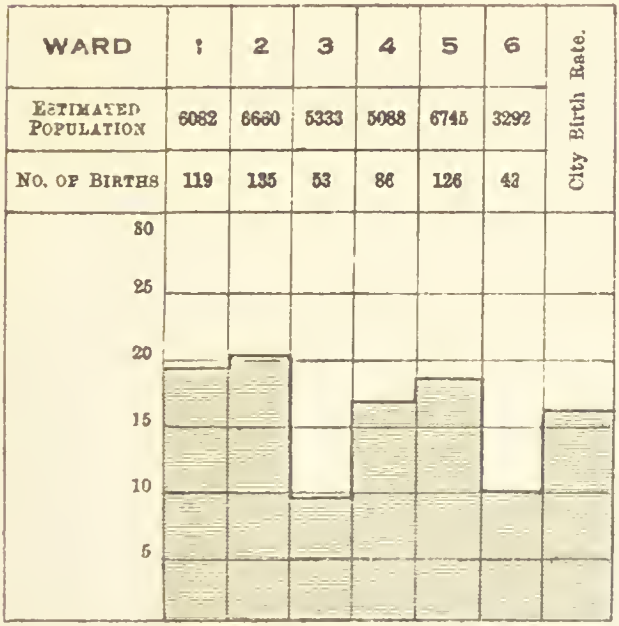
If the birthrate as a whole is going to continue declining, then our only chance of keeping up our numbers is to make greater efforts to give those who are born every chance to grow up strong and healthy. Ignorance, poverty, bad housing, etc., are all factors in producing an excessive infant mortality, and it is plain that the responsibility of this must be shared by sanitary authorities, landlords, and, not least, by the people themselves. The notification of births, along with the agency of a child welfare centre and visitation by a tactful and sympathetic health visitor, are means towards the diminution of infant mortality, so are the elimination of bad sanitary conditions and the education of parents in the general and domestic conditions which are necessary for ensuring hygienic conditions of childhood, in short it requires co-operation—co-operation in the fullest sense, for it is no use for only one agency to be at work if the others remain passive.

From 1918 to 1923 there had been, however, an upward tendency, the birth-rate having rising from 12·8 per 1000 of that year to 21·2 per 1000 in 1923. During these five years there had been a greater number of marriages, with a greater proportion of marriages of younger couples. Early marriages may mean a high birth-rate, but it does not necessarily follow that the nation benefits by the increased rate. In fact it may well be otherwise, especially if the increased birth-rate coincides with an increased infant mortality.

While the birth-rate for the whole of the City is 16·9 per 1000, it may be noted that in three Wards—viz., Wards 1, 2, and 5—this birth-rate is exceeded, while in Wards 3, 4, and 6 the birth rate is below that of the City generally. This was also the case in 1924, but it is to be noted that in every ward the birth rate was lower than in the previous year.

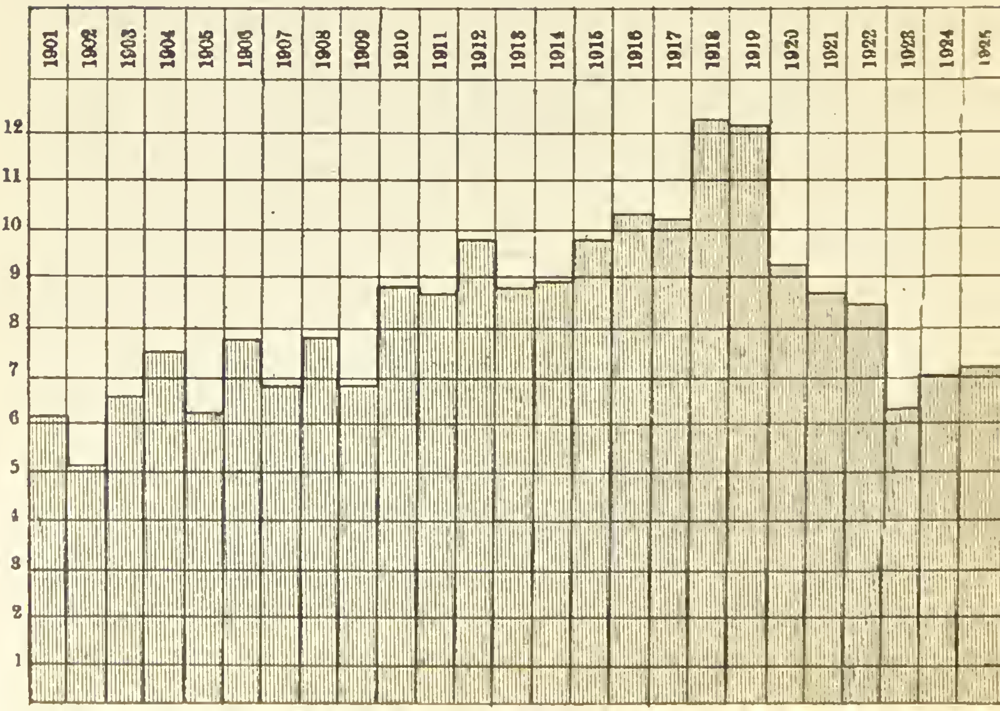
Ward 1 has a birth-rate of 19·5 per 1000; Ward 2 has the highest birth rate of 20·2 per 1000; Ward 3 has the lowest birth-rate of 9·9; Ward 4 has a birth-rate of 16·8; Ward 5 a birth-rate of 18·6, and Ward 6 has a birth-rate of 16·9 per 1000.

Chart showing the Ward Birth Rate per 1000 of Population.



Connected with the birth-rate is the question of illegitimacy and in looking back past years it may be noted that from 1899 to 1902 a gradual decline from 6·8 per cent. to 5 per cent. took place. From the accompanying chart it will be seen that from the latter year there tended to be a steady increase until it reached a record of slightly over 12 per cent. in 1918. In the year following the rate was very slightly lower, but in the succeeding years there was a considerable decline, and this year stands at 7·3 per cent., a figure considerably higher than one desires, but a great improvement over previous years. It is at the same time only right to state that this unsatisfactory phase in relation to births is more than a local circumstance. Associated with illegitimacy, unfortunately, is an increased infantile mortality. This is especially so during the first month of life, and is largely due to the fact that, in addition to the causes of death common to all infants, the mother of the illegitimate child is often under circumstances where she cannot do justice to her child and, it may be, even indifferent to its welfare.

CHART SHOWING PERCENTAGE OF ILLEGITIMATE BIRTHS
DURING THE PAST 25 YEARS.



DEATHS.

The deaths registered in the Burgh during the year numbered 572, of which 138 were classed by our Registrar as rural, *i.e.*, persons dying within, but not belonging to the Burgh. There were also three landward deaths.

Table Showing the Number of City Male and Female Deaths during each Month of the Year.

(Not including deaths of citizens without the Burgh.)

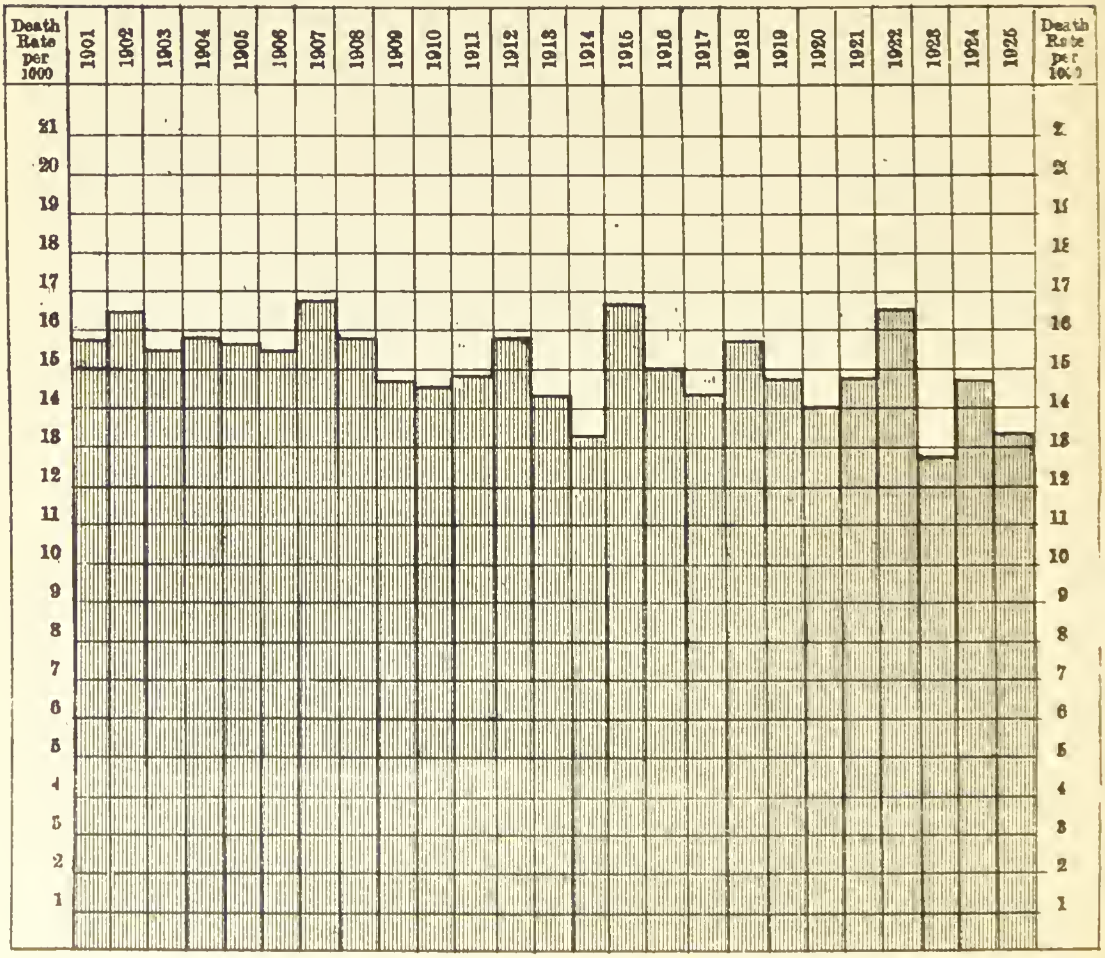
MONTH.	Male.	Female.	Total.
January, ...	17	26	43
February, ...	16	22	38
March, ...	21	18	39
April, ...	19	17	36
May, ...	19	16	35
June, ...	12	13	25
July, ...	10	18	28
August, ...	14	15	29
September, ...	6	19	25
October, ...	11	14	25
November, ...	27	21	48
December, ...	30	33	63
Total of City, ...	202	232	434
Rural, ...	75	63	138
Total, ...	277	295	572

After taking into account the deaths of citizens outside the Burgh boundaries, the annual mortality rate for the year is 13·3 per 1000, as compared with 14·5 in 1924.

If we compare this year's death-rate with the death-rates of only 20 years back one cannot fail to find satisfaction in the present existing state of matters. Then, 18 to 20 per 1000 and even over was the rule rather than the exception. In the preface to my annual reports of 1903 and 1906 I stated that these reports were not only the most satisfactory which it had been my province to submit, but, to the best of my knowledge, the most satisfactory which had ever been presented to the Local Authority—the annual mortality for the City being at the exceedingly low rate of 15·5 per 1000.

Again, in 1914, I was able to record that the death rate was only between 13 and 14 per 1000; while in 1923 the mortality rate was the lowest ever recorded in the annals of the City, viz., 12.7 per 1000. This year's rate is 13·3 per 1000, a rate considerably lower than the average of the last 20 years, and shows that Perth has kept abreast of the times in all things pertaining to the welfare of its inhabitants.

CHART SHOWING THE DEATH RATE FOR THE PAST 25 YEARS.



One pleasing feature, which will be referred to again in more detail, is the fact that a large number of deaths occurred in old people, and it is gratifying to record that 44 per cent. of the total deaths occurred in persons over 65 years of age, being 1 per cent. more than in the previous year.

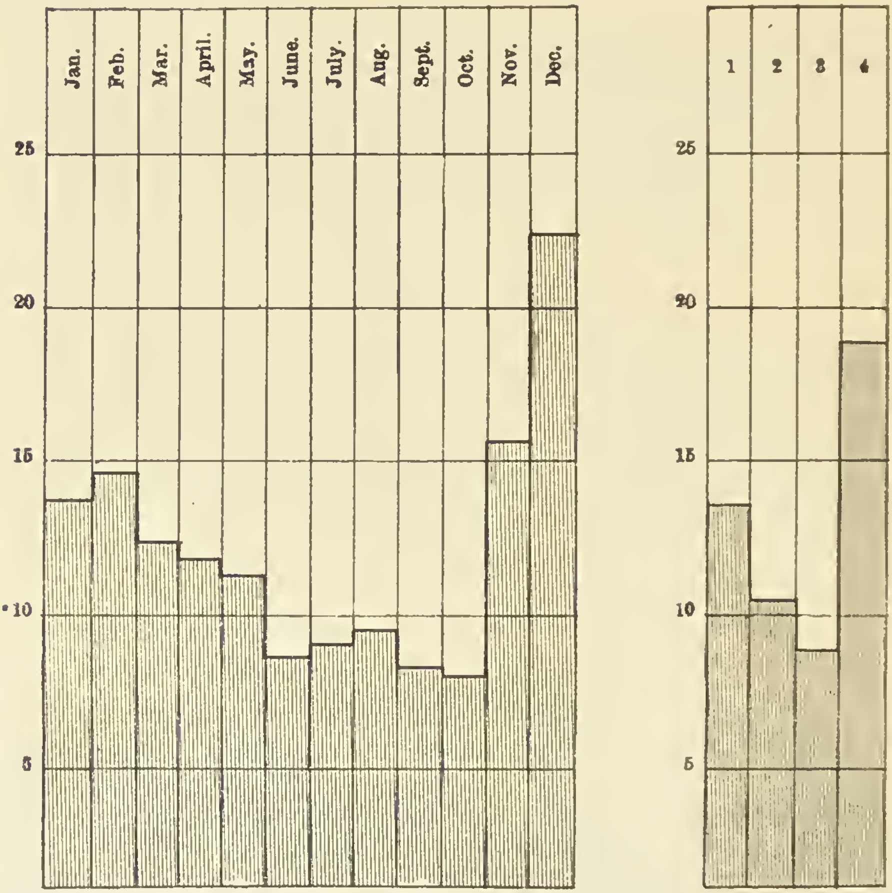
Looking at the monthly death rates, we find that the highest death rate was recorded in the month of December, when it reached 22·5 per 1000. The next highest monthly return was in November, when it stood at 16, followed by February with 14·9. It will thus be seen that on only one occasion did the monthly mortality reach as high as 20 per 1000.

During December the most noticeable feature was the number of deaths among elderly people from diseases of the circulatory and respiratory systems; while deaths of infants were also much above the average, largely the result also of chest troubles. Forty-nine per cent. of the deaths in this month occurred in people over 65 years of age. In November, which had the second highest monthly mortality of 16 per 1000, infantile deaths, as in April, were well above the average; but the most important features were the large number of deaths attributed to circulatory and respiratory diseases and Cancer, no less than 23 or just on 50 per cent. of the total deaths of this month being due to these causes. In this month 41 per cent. of the total deaths were over 65 years of age.

The lowest monthly rate occurred in October, and was 8·1 per 1000. As a rule the lowest monthly mortality has taken place in either July or September. During the month of October two deaths were registered from violence, while only one death, a number less than to be expected at this season of the year, was due to disease of the lungs. The next two months with the lowest mortality were June and September, with 8·3 per 1000.

In the following months the death rate was above the annual rate, viz.:—January, February, November and December, while in the remaining 8 months it was below.

Chart showing the Monthly and Quarterly Death Rates per 1000 of Population for the Year 1925.


Monthly Death Rate.

Quarterly Death Rate.

Annual Mortality Rate = 13·3 per 1000.

Looking at the quarterly death returns, which were, 1st quarter 13·8 per 1000, 2nd quarter 10·5, 3rd quarter 8·9 and 4th quarter 18·8, it may be noted that the second and third quarters were below the annual average. Compared with the previous year the quarterly death return is higher in the first and fourth quarters but lower in the other two.

WARD DEATHS.

TABLE SHOWING THE WARD DISTRIBUTION OF DEATHS DURING 1925.

DISTRICT.	Males.	Females.	Total.
Ward 1, ...	31	58	89
Ward 2, ...	47	42	89
Ward 3, ...	33	33	66
Ward 4, ...	29	33	62
Ward 5, ...	46	52	98
Ward 6, ...	16	14	30
Total, ...	202	232	434

The figures given exhibit, however, no true relative mortality between the different Wards, because the population is different in each.

However, after careful consideration of the Census populations of 1911 and 1921 and the excess of births over deaths since the latter year, I have arrived at an estimate of the Ward population, which I believe will give a fairly true index.

	Est. Pop.	Death Rate.	1924.
Ward 1,	6082	14·6 per 1000.	12·3 per 1000.
Ward 2,	6660	13·3 ,,	14·5 ,,
Ward 3,	5333	12·3 ,,	14·1 ,,
Ward 4,	5088	12·1 ,,	12·6 ,,
Ward 5,	6745	14·5 ,,	16·5 ,,
Ward 6,	3292	9·1 ,,	13·8 ,,

As compared with 1924 it will be noted that there has been a decreased mortality in all the Wards, excepting Ward 1, more particularly noticeable in Wards 6, 5 and 3. The respective decreases are as follows:—Ward 2, 1·2 per 1000; Ward 3, 1·8 per 1000; Ward 4, ·5 per 1000; Ward 5, 2 per 1000; Ward 6, 4·7 per 1000. It will be noted that Ward 6 has the lowest death rate of the year. Last year the best ward mortality occurred in Ward 1 —a very exceptional occurrence.

TABLE SHOWING THE MORTALITY AT THE DIFFERENT AGE PERIODS IN THE VARIOUS WARDS FOR THE YEAR 1925

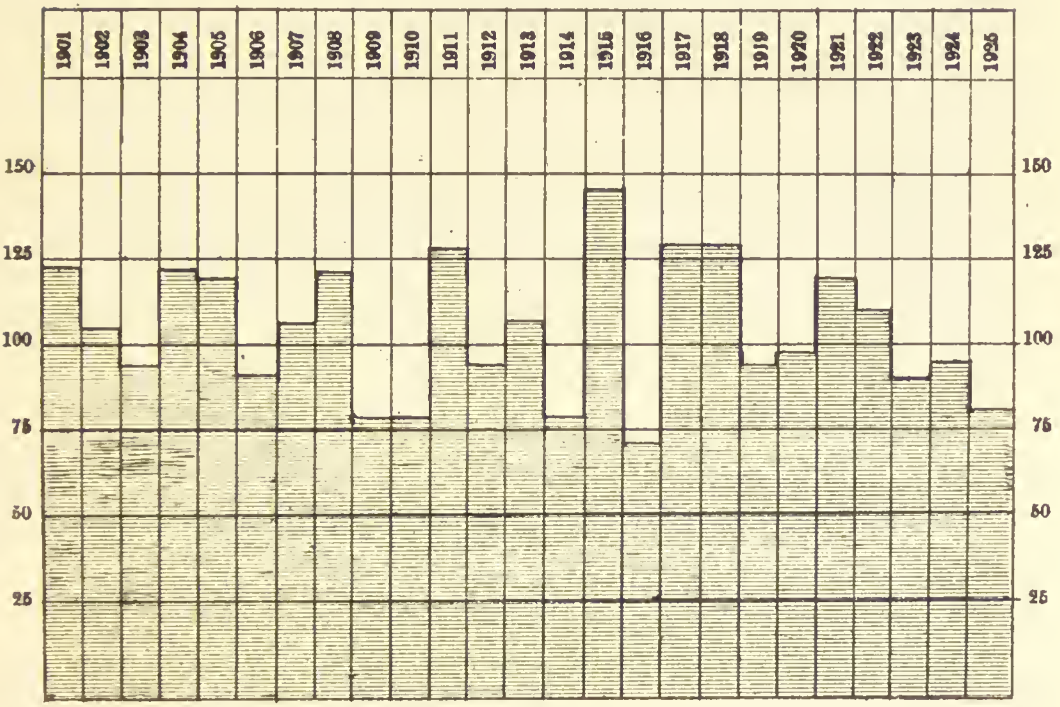
AGE.	Ward I.	Ward II.	Ward III.	Ward IV.	Ward V.	Ward VI.	Total.
Under 1 year, ...	14	12	1	6	11	2	46
1—5 years (Infant period), ...	5	6	—	6	8	1	26
5—15 years (School period), ...	4	1	2	2	1	1	11
15—25 years (Adolescent period), ...	9	5	—	4	—	1	19
25—45 years (Mature period), ...	10	11	7	4	12	5	49
45—65 years (Late-mature period), ...	18	14	18	16	19	7	92
65 and upwards (Post-mature period),...	29	40	38	24	47	13	191
Total, ...	89	89	66	62	98	30	434

INFANTILE DEATHS.

The number of infants who died under one year was 46, so that the infantile death rate, or proportion of deaths of infants under one year to the registered births, is 81 per 1000 births, and is equal to 10 per cent. of the total deaths. Last year the number of infantile deaths was 54, equivalent to 90 per 1000 births.

In reviewing the deaths of infants for the past 25 years, as can best perhaps be done by examining the following chart, it will be noted that on twelve occasions the infantile death rate per 1000 births has been under the 100, the lowest recorded being 74 in 1916; on nine occasions between 100 and 125, and on four occasions between 125 and 150.

CHART SHOWING THE INFANTILE DEATH RATE PER 1000 BIRTHS DURING THE PAST TWENTY-FIVE YEARS.



As has been done now for several years, a printed card with instruction on "The Care, Feeding, and Clothing for Infants" is given by the Registrar to the person registering the birth of a child where no medical man has been in attendance. This card, which is supplied with a hook, so as to be easily hung on the wall, is willingly given to anyone interested in the welfare of infants.

Having always considered this portion of the death returns as very important, I have in previous years given a detailed account of these infantile deaths, and the following table exhibits in a concise manner the causes and periods of infantile deaths belonging to the City.

INFANTILE MORTALITY FOR THE YEAR 1925.

Including deaths without, but belonging to, the Burgh.

CAUSES.	Under 1 day	2 days	3 days	4 days	5 days	6 days	7 days	Total under a week	Under 2 weeks	3 weeks	4 weeks	Total under 1 month	Under 2 months	3 months	4 months	5 months	6 months	7 months	8 months	9 months	10 months	11 months	Under 12 months	Total.
Premature Birth - -	5	1	...	1	...	...	...	7	...	...	...	7	...	...	...	...	...	...	...	...	...	...	...	7
Congenital Malformations	1	...	...	...	...	...	...	1	1	1	...	3	1	...	...	...	...	...	...	...	...	...	..	4
Debility, Malnutrition -	2	1	...	...	...	...	...	3	1	1	...	5	1	...	...	1	...	1	...	...	...	1	...	9
Convulsions - - -	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	1	...	...	..	...	...	...	2
Diarrhœa, Gastritis, Enteritis, &c.	..	...	...	...	...	...	...	...	...	...	...	...	1	...	...	1	1	1	...	...	...	...	...	4
Zymotic Diseases Whooping Cough -	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	..	...	...	...	...	...	...
Measles - -	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	1	1	...	4
Diphtheria - -	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Influenza - -	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Respiratory Diseases -	...	...	...	...	...	...	...	...	1	...	1	2	1	2	1	...	1	1	...	...	1	...	...	9
Tubercular Diseases -	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1
Nervous Diseases - -	1	...	...	...	...	...	...	1	...	...	...	1	...	..	...	...	...	...	...	...	...	...	...	1
Syphilis - - -	...	...	...	...	...	...	...	...	2	1	1	4	...	...	...	...	...	...	...	...	...	...	..	4
Overlain (Suffocation) -	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Burns or Scalds - -	...	...	..	...	...	...	...	...	...	..	...	...	...	...	...	...	...	...	...	...	...	...	...	..
Other Causes - -	1	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	..	...	...	...	1
TOTAL - -	10	2	...	1	...	...	...	13	5	3	2	23	4	3	1	3	4	3	1	...	2	2	...	46

The total number of deaths on the *first* day was 10. This is 4 less than the number of last year. As a rule, of the deaths during the first week the majority occur on the first day, and this is borne out in the preceding table.

The number of deaths within the *first* week was 13, being 3 more than last year at this period. This means that, of all the children who died under one year of age, every fourth one died during the first week of infancy.

The cause of this percentage of deaths within the first week will be gathered from a consideration of the diseases which occasioned the deaths, many of the causes no doubt being attributed to maternal conditions.

During the *second* week there is a marked decline, in fact only five deaths being recorded at this period. As a rule, each succeeding week during the first month shows a decline as compared with the week before, and this is borne out this year.

The number of deaths within the first month was 23, showing an increase of 9 as compared with last year, and is equivalent to nearly 50 per cent. of the total infantile deaths, as compared with 26 per cent. in 1924.

As a result largely of the great number of deaths during the first week, the deaths during the first month are greatly in excess of any succeeding month, being equal to six times the number of any succeeding month as compared with twice in the previous year.

The large percentage of infantile deaths is easily explained by glancing at the *causes* of death, where it will be seen that Premature Births accounted for 30 per cent. of all deaths at this early period. This is above the percentage of last year. If to these cases there be added the cases which died as the result of *congenital malformations* (and which one could not reasonably hope to survive), we find that of the infants dying during the *first* month no less than 43 per cent. were attributable to these two causes. If to these cases there be added the cases which died as the result of debility at birth, we find that of the infants dying during the *first* month no less than 65 per cent. were attributable to one or other of these three causes. Of the remaining deaths at this period, two were attributed to respiratory disease, and four to specific disease.

In the **second** month many of the weaklings who had survived a month succumb at this period. In this month, and succeeding months, debility and malnutrition continue as a cause of death, while diseases of the digestive system occupy a very prominent place. No less than 4 deaths were attributed to Diarrhœa and stomachic troubles, while 9 resulted from Malnutrition and Debility. Of these 13 deaths, which one must believe in many cases might have been prevented, all occurred under the age of eleven months, and no less than 12 under seven months of age. These figures are deplorable, and one cannot but suspect, in fact be sure, that the majority of these deaths were directly the result of improper feeding.

There is no fact more clearly established regarding the health and life of infants among the poor than that they should be entirely breast-fed for at least six or seven months. Even in the poorest surroundings the breast-fed child stands a very good chance of living, for it escapes the pitfalls and dangers lurking behind food out of a bottle. The trouble begins with the weaning of baby. She has not the knowledge, and is unable to exercise the careful preparation and storing of the food, which in a hot dry summer is apt to become contaminated and infected by flies.

Mothers, with few exceptions, are anxious to do all they can for their babies and it is, generally, not from wilful neglect but from ignorance and carelessness that they do not do all that is right. Or it may be that they follow the advice of one who thinks she is well qualified to advise since she was the "mother of ten" who, by the will of Providence, were taken from her.

Competent and good mothers are to be found living side by side in the same street with ignorant and careless ones. The same wages are coming in, yet in one the house is tidy, the atmosphere sweet, and the children tidy ; in the other squalour abounds, atmosphere stuffy, and the children dirty and verminous. The essential difference will be the amount of intelligence and care bestowed upon infant life and the wise or unwise spending of wages.

Breast feeding is out of fashion. In some cases, owing to circumstances, the mother is unable to nurse her child, but in a great number of cases the mother either makes no serious attempt at securing a supply of breast milk or is indifferent to the fact that there is no equal to the maternal milk. Mother's milk is the natural food of the infant, and the infant has every right to command it.

Moreover, if the mother could be made to realise that with the substitution of food other than breast milk her troubles with baby will be greatly increased, she would double her efforts to secure that baby was not brought up on the bottle.

Anyone who has visited the poorer quarters of a town must often have been surprised as to what with certain mothers constitutes an infant's dietary. It has been my lot to see a baby just a month old having its mouth filled with potatoes and mince. The poor little mite was naturally unable to swallow it, but the mother persists, hoping to get some over its throat by the liberal use of strong tea.

Is it to be wondered at that the baby has restless days and nights, that the baby suffers from "gripes," that many though passing through the trying ordeal of improper feeding never can be classed as healthy or robust children, or is it to be wondered at that so many succumb before reaching the twelvemonth? The marvel is how many survive.

Milk, properly prepared, should be the first food tried where mother's milk is not obtainable. But the milk must be pure. In this respect, Local Authorities have of recent years done much not only in preventing adulterated milk getting on the market, but also in seeing that the conditions under which the milk is gathered are of a high sanitary order, for if cleanliness be required anywhere it is in the cowshed and dairy. But the milk must be kept pure in the household. It is no exaggeration to say that 95 per cent. of the poorer classes take no precaution to protect the milk from infection. It is generally placed in some stuffy corner and left uncovered so that it is only a matter of a short time during the summer months for the milk to become contaminated by flies and rendered a virulent poison. Boiling the milk before giving to the child avoids the risk to a large extent, but it is to be feared that such simple precautions are more than one can expect from a careless class which has little regard for cleanliness and health.

While the deaths in the first month reached 23, in the succeeding months the average was 2. But what must be particularly observed was that respiratory diseases were responsible for 9 deaths of infants at this period—truly, if not an appalling number, at least an appalling average, for we find that just on 30 per cent. of the deaths of infants between one and twelve months were the result of chest troubles. One pictures in one's mind that many of those deaths were preventable.

Of the other causes of death, Measles exacted a heavy toll, there being no less than 4 deaths at this tender age from this cause, as compared with 1 in 1924. On the other hand, Whooping cough, as a factor in infant mortality, was absent throughout the year, while it is pleasing to record that no infant deaths occurred from burns or scalds or from having been overlain.

As regards the houses in which these infantile deaths occurred, it may be mentioned that 5 took place in the South Street, 4 in the High Street, 4 in Cross Street, and the remainder in different parts of the City.

As regards occupations of Parents, the most prominent was that of labourers, followed by that of motor mechanics and firemen and those engaged in the dyeing industry. It is pleasing to note that there was not a case of a housemaid. In former reports one had to deal with a fair number of deaths of infants whose mothers were servants and whose infants had been farmed out.

Another point may be noted, viz., that the death rate among the illegitimate is, as might be expected, considerably higher than among the legitimate. The number of legitimate births during the year was 521. Of these, 42 died—a percentage of 8 per cent. The illegitimate births were 41, with a death roll of 4, being equivalent to 9·8 per cent. I am glad to say this latter figure compares most favourably with previous years, in fact I am not aware of the figures relating to legitimate and illegitimate deaths of infants ever having approximated so closely. Formerly, the percentage of the latter class was always well into the double figures.

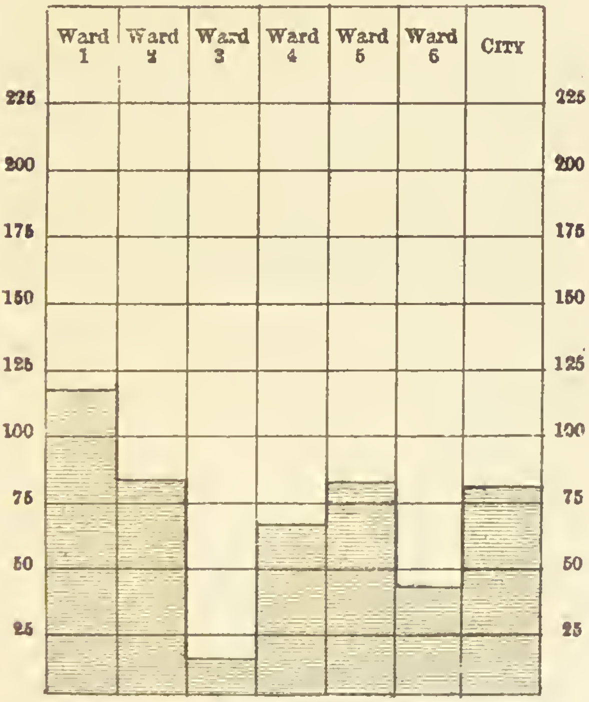
Parents have their duties to their children, so also has the State. It is not the duty of the State to take away a parent's responsibilities, but there are cases where, for the sake of the infant, the State must take action. We must be agreed as to the value of a child's life, not only from a State view, but from a natural and humanitarian point of view, and we must be determined to uphold it.

Considering these infantile deaths from a Ward point of view, and in relation to the births in each Ward, we find that

					1924.
Ward 1	has an infantile death rate of	118	per 1000 births		116
,, 2	,, ,,	88	,,		76
,, 3	,, ,,	18	,,		30
,, 4	,, ,,	69	,,		80
,, 5	,, ,,	87	,,		107
,, 6	,, ,,	46	,,		90

the infantile death rate for the whole City being 81 per 1000 births

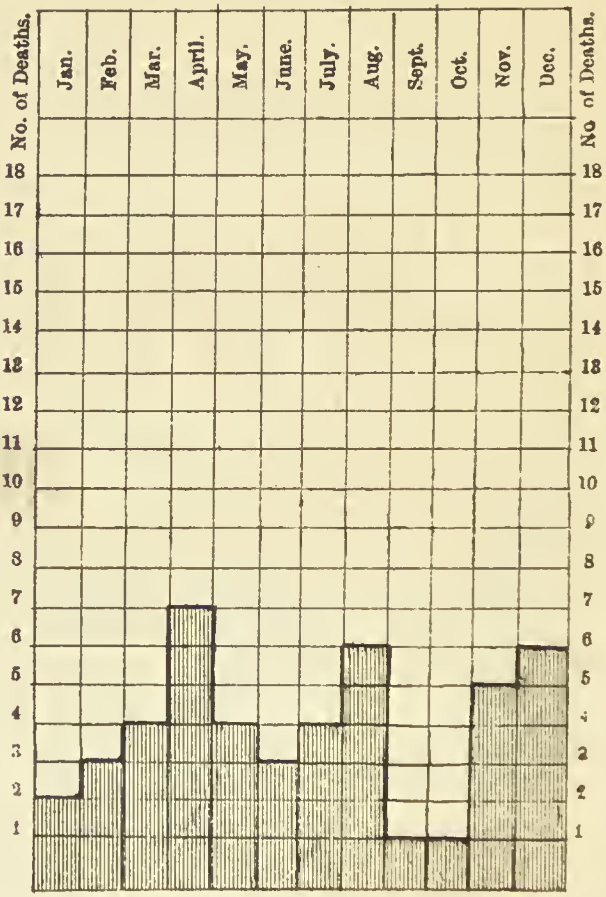
CHART SHOWING THE INFANTILE DEATH RATE PER 1000 BIRTHS IN THE VARIOUS WARDS AND CITY.



This year the lowest rate is recorded in Ward 3, followed by Wards 6 and 4; as is usually the case Ward 1 was the highest.

The following chart is interesting as showing how the infantile deaths vary throughout the year. In five months, viz., January, February, June, September and October, the number was below the monthly average; while in the remaining months it was above. The greatest monthly number was 7 and occurred in April, followed by August and December with 6.

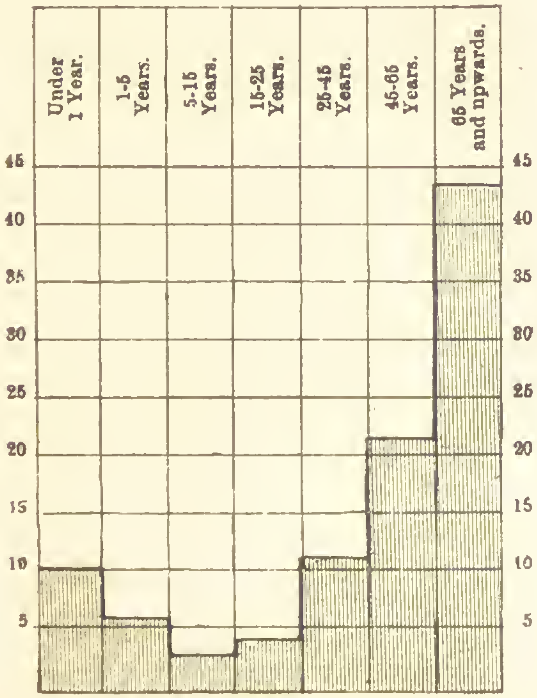
CHART SHOWING SEASONAL INFANTILE MORTALITY DURING 1925.



OTHER AGE PERIODS.

The deaths of children between 1 and 5 years were 26, being equivalent to 6 per cent. of the total deaths; between 5 and 15 years (school period) 11 or 2·5 per cent.; between 15 and 25 years (adolescent period) 19 or 4·3 per cent.; between 25 and 45 years (early mature period) 49 or 11·2 per cent.; between 45 and 65 years (late mature period) 92 or 21·1 per cent.; and at 65 years and upwards (post mature period) 191 or 44 per cent. Compared with last year the percentage of deaths at the post mature period has increased, when it was 42·5 per cent. Of these latter deaths 37 were between 65 and 70 years, 93 between 70 and 80 years, 51 between 80 and 90 years, 10 between 90 and 100 years, the oldest age recorded being 96 years.

Chart Showing the Mortality at the Different Age Periods as Percentage of the Total Deaths.



CAUSES OF DEATH.

(1.) ZYMOTIC DISEASES.

The number of deaths ascribed to zymotic causes, including those from septic causes—Septicæmia, Pyæmia, Puerperal Fever, and Erysipelas—and those from Diarrhœa, Gastritis, and Gastro-Enteritis, as well as those from Venereal disease, was 44, which is equivalent to a death rate of 1·024 per 1000 persons living.

Table showing the Mortality from Principal Zymotic Diseases at the Different Age Periods.

DISEASE.	Under 1 Year.	1-5 Years.	5-15 Years.	15-25 Years.	25-45 Years.	45-65 Years.	65 and upwards.	Total.	Death Rate per 1000.
Mumps -	...	...	...	...	...	...	...	...	...
Diphtheria -	...	1	1	...	...	...	...	2	·060
Scarlet Fever	...	6	5	...	...	...	...	11	·331
Typhoid Fever	...	...	...	1	1	...	...	2	·060
Measles -	4	3	1	...	...	...	...	8	·240
Whooping Cough	..	1	..	...	..	...	...	1	·060
Influenza -	...	...	...	1	1	...	1	3	·090
Diarrhœa, including Gastritis and Enteritis	3	1	1	...	...	1	1	7	·210
Total -	7	12	8	2	2	1	2	34	1·024
1924 -	14	15	7	1	2	3	1	43	1·295

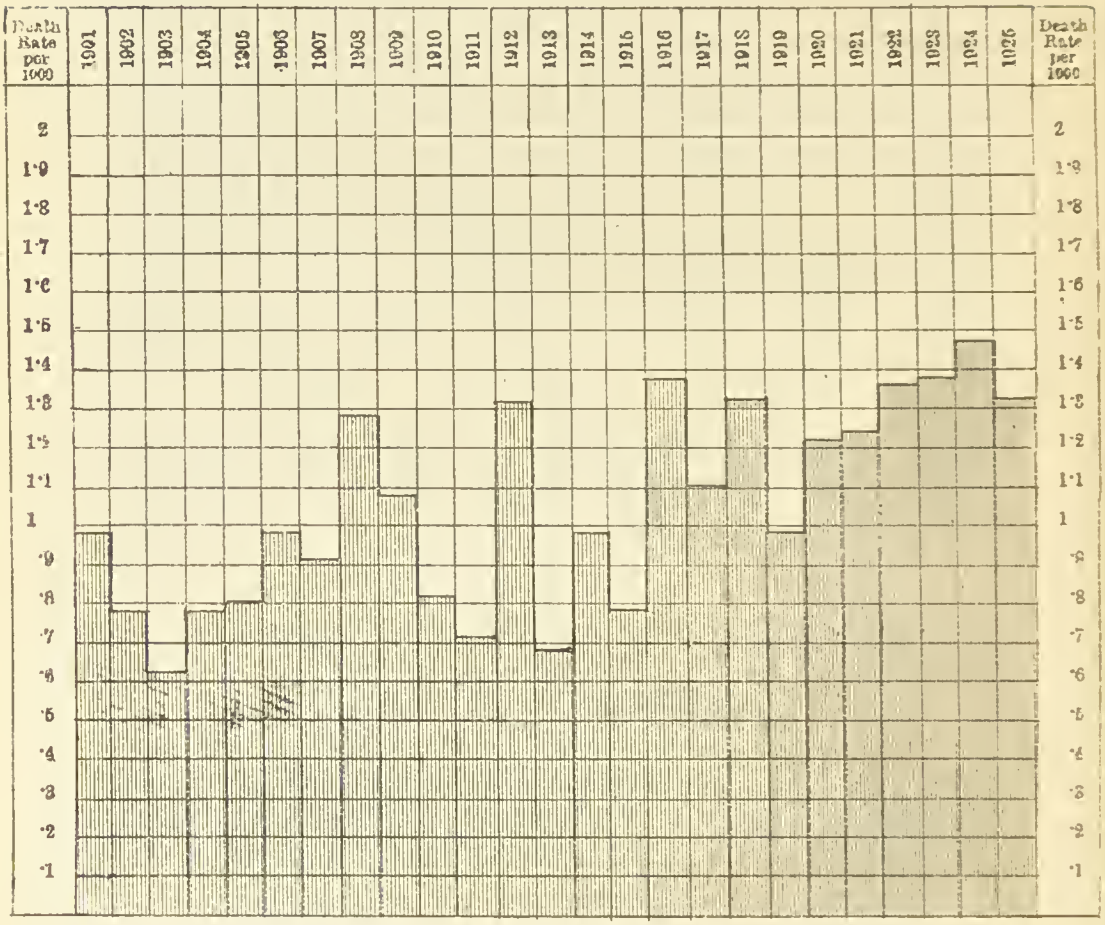
From the foregoing it will be seen that Scarlet Fever has accounted for no less than 11 deaths. This equals the number of last year, the largest annual number of which I have knowledge. As no less than 563 cases of Scarlet Fever were reported during 1924, this implies a case mortality of 1·9 per cent., a low figure considering the virulent type of fever we had to deal with, more particularly in the early part of the year, and compares favourably with the previous year, when the case rate was 2·2 per cent. Measles, which prevailed during the last quarter, was responsible for 8 deaths, 4 of these occurring in infants under a year old and 3 between one and five years. Two deaths, as compared with none in 1923 and 1924, occurred from Diphtheria. It is, however, satisfactory to record that only one death resulted from Whooping-Cough and 3 from Influenza, as compared with 9 and 6 respectively in 1924. Deaths from intestinal troubles, particularly among infants, showed a decrease of 50 per cent. Syphilis was attributed as a cause of death in four cases of infants. That this is a true index of the prevalence of this disease among infants I have grave doubt.

(2.) CONSTITUTIONAL DISEASES.

The deaths from this class of disease, including deaths outwith the Burgh, numbered 98, representing a proportion of 2·9 per 1000 living.

Cancer is the principal disease. In 1912 deaths from Cancer for the first time outnumbered those resulting from Consumption, and this year has been more than repeated, in fact nearly trebled. It appears evident from a study of mortality tables for past years that this disease, though less than in last year, tends to be on the increase. The deaths from cancer numbered 44, and were equivalent to a death rate of 1·325 per 1000, as compared with 1·475 per 1000 in 1924.

CHART SHOWING THE DEATH RATE FROM CANCER OR MALIGNANT DISEASE DURING THE PAST TWENTY-FIVE YEARS.



Phthisis, or tuberculosis of the lungs, which used to be classed as a constitutional disease, has been a notifiable disease since 1912. During the year 17 deaths, including two without the Burgh, occurred from this cause. One occurred between 5 and 15 years, 5 between 15 and 25 years, 7 between 25 and 45 years, and 2 between 45 and 65 years of age. This is 7 less than in the previous year, and based on the estimated population of 33,200, is equivalent to ·515 per 1000, as compared with ·721 in 1924.

The percentage of deaths to total deaths was 3·9, and the death rate as stated was equivalent to ·515 per 1000 persons living. Compared with the corresponding figures of 1900, viz., 9·2 percentage to total deaths and a death rate of 1·9 per 1000, it will be evident that the factors which made this disease to be classed as the "white scourge," are slowly but surely being got under control.

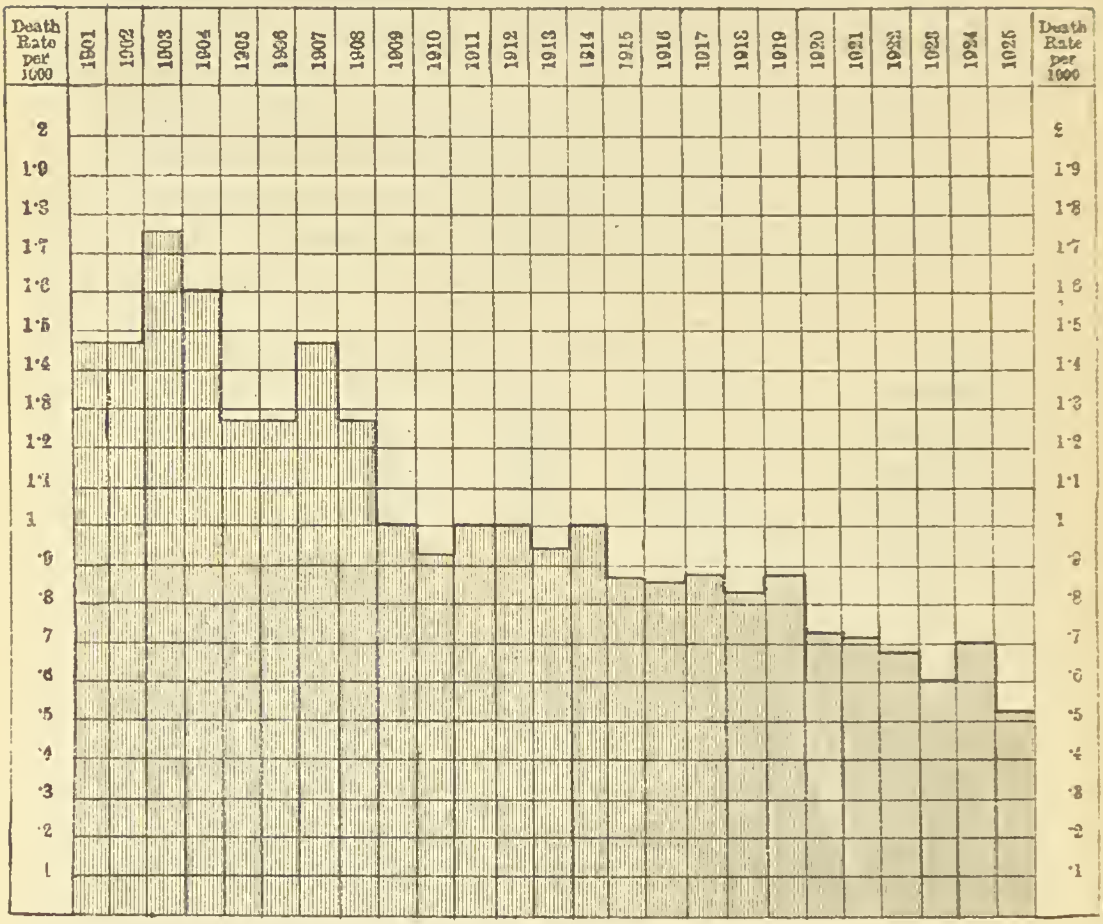
The Ward distribution of these deaths was as follows:—Ward 1, 7 deaths; Ward 2, 5 deaths; Ward 3, 1 death; Ward 4, 1 death; Ward 5, 2 deaths; Ward 6, 1 death. If we judge these figures by the respective population of each Ward, we find that—

						1924.
Ward 1	has a	consumptive	death rate of	1·15	per 1000.	·81
Ward 2	,,	,,	,,	·75	,,	1·30
Ward 3	,,	,,	,,	·18	,,	·18
Ward 4	,,	,,	,,	·19	,,	·19
Ward 5	,,	,,	,,	·29	,,	1·17
Ward 6	,,	,,	,,	·30	,,	·30

In previous reports I have given considerable space to a description of this malady, as well as to the preventive measures to be adopted, both by the individual and by the Local Authority, to stamp this disease out of the country, but it is well to again record that an important administrative change has occurred as regards the treatment of insured persons. In 1920 the treatment of these insurance patients, which was undertaken by the Local Insurance Committee, came within the scope of the Local Authority's duties, and now, not only has the Local Authority to provide institutional treatment or domiciliary treatment in the way of granting provisions where considered necessary, and the payment of medicine incurred under the treatment of the doctor, but they are also now responsible for the care of all forms of tuberculosis.

The death rate from this cause is a record for the city, and a glance at the following chart will show how satisfactory has been the decline during the past years.

CHART SHOWING THE DEATH RATE FROM PHTHISIS DURING THE PAST TWENTY-FIVE YEARS.



(3.) LOCAL DISEASES.

The number of deaths registered under this class was 239. These causes give a death rate of 7·1 per 1000, as compared with 6·5 in 1924. No death was attributed to diseases of the lymphatic system, or to a disease of an organ of special sense, *e.g.*, the ear, while deaths as the result of "confinement" numbered three, being two less than in the previous year.

As has been the case in previous years, deaths from nervous, respiratory and circulatory causes are the most prominent.

As regards respiratory troubles, Bronchitis is the commonest, followed by Broncho-pneumonia and Pneumonia. 9 deaths of infants, 9 deaths of children between 1 and 5 years of age, and 19 deaths of persons over 65 years of age occurred from pulmonary trouble. This is a number somewhat more than last year.

Attention has already been drawn to the number of infantile deaths from respiratory disease, and when we add to that number the number of those dying between the age of one and five years, we have a total of 17—a figure the same as last year and a figure surely capable of reduction.

Nervous diseases account for 47 deaths. No less than 38 deaths took place from apoplexy, and of these the great majority occurred in people over 60 years of age ; in fact, no less than 31 occurred in persons over 65. As regards diseases of the Circulatory System, 32 deaths were attributed to heart disease and 10 to syncope.

(4). VIOLENCE.

The number of deaths attributed to "violent" causes during the year was 15, being five less than in 1924. Two were due to accidents from vehicles, while five were the result of falls, etc., none from drowning, and one from poisoning. I am glad to report, however, that during the year no infant death resulted from overlying. One death resulted from burns or scalds as compared with none in the previous year, and two in 1923. Six deaths were suicidal as against five in 1924. Two were the result of lysol-poisoning, one from hanging, one from cut throat and one by a railway engine.

SUMMARY OF DEATHS.

		1924
I. SPECIFIC FEBRILE OR ZYMOTIC DISEASES—		
1. Miasmatic Diseases	27	33
2. Diarrhœal (Enteritis, etc.)	7	12
3. Malarial	—	—
4. Zoogeneous	—	—
5. Venereal	4	1
6. Septic	3	3
II. PARASITIC DISEASES	—	—
III. DIETETIC DISEASES	—	2
IV. CONSTITUTIONAL DISEASES ..	80	98
V. DEVELOPMENTAL DISEASES ...	51	56
VI. LOCAL DISEASES—		
1. Diseases of Nervous System ...	47	63
2. Diseases of Organs of Special Sense ...	—	—
3. Diseases of Circulatory System ...	88	100
4. Diseases of Respiratory System ...	63	47
5. Diseases of Digestive System ...	11	19
6. Diseases of Lymphatic System and Ductless Glands	—	—
7. Diseases of Urinary System ...	20	12
8. Diseases of Organs of Generation ...	—	—
9. Diseases of Organs of Parturition ...	3	5
10. Diseases of Locomotary System ...	—	2
11. Diseases of Integumentary System ...	—	—
VII. VIOLENCE—		
1. Accident or Negligence	9	15
2. Suicide	6	5
VIII. ILL-DEFINED OR NON-SPECIFIED CAUSES	15	21
Total	434	494

NOTIFIABLE INFECTIOUS DISEASE.

The total number of notifiable diseases recorded during the year 1925 was 684, as compared with an average of 300 in the previous nine years.

Table showing the Ward Distribution of Cases Notified during the Year 1925, with Number of Cases Treated in Hospital.

Nature of Disease.	Ward 1.		Ward 2.		Ward 3.		Ward 4.		Ward 5.		Ward 6.		Treated in Hospital	Treated in Home	Total
	Under 5 years	5 years & over	Under 5 years	5 years & over	Under 5 years	5 years & over	Under 5 years	5 years & over	Under 5 years	5 years & over	Under 5 years	5 years & over			
Smallpox, ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Typhoid Fever, ...	...	1	.	3	...	...	...	4	...	...	...	...	8	...	8
Ophthalmia Neonatorum,	3	...	...	...	...	...	...	...	1	...	...	...	...	4	4
Pneumonia, ...	...	1	...	2	...	...	1	3	...	4	...	1	4	8	12
Scarlet Fever, ...	39	82	27	72	8	58	24	102	22	104	5	20	435	128	563
Diphtheria, ...	2	1	1	1	1	2	2	...	1	...	...	...	11	...	11
Erysipelas, ..	...	8	...	3	...	5	...	3	...	4	...	2	5	20	25
Infective Jaundice,	...	...	...	...	...	...	...	2	...	...	...	1	...	3	3
Phthisis, ...	...	7	...	8	...	3	...	2	...	5	...	1	8	18	26
Tuberculosis other than Phthisis,	3	5	2	5	1	...	2	7	...	4	1	1	21	10	31
Encephalitis Lethargica	...	...	...	...	...	...	...	...	...	..	...	...	...	...	...
Puerperal Fever, ...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	1
	47	105	30	94	10	68	29	123	24	122	6	26	492	192	684
Total, ...	152		124		78		152		146		32				

As compared with the previous year there has been an increase of 68 cases.

I am glad to report that there has been no recurrence of Small-pox or Typhus Fever. It is over twenty years since there was a case of the latter disease in Perth, and then it was a case of a tramp from Glasgow. No case of Cerebro-Spinal Fever or Sleeping Sickness was reported.

The average monthly number of cases was close on 57, being exceeded on five occasions, and in the second and third quarters of the year being less. The largest number of cases was reported in January, February and October, when there was a large number of cases of Scarlet Fever, the notifiable cases for these months being 113, 88 and 76 respectively. The smallest number occurred in July, when only 17 cases of infectious disease were notified, followed by 26 and 29 in August and June. In fact nearly 40 per cent. of the cases were notified in the first quarter of the year.

As regards the age period, 145 were under 5 years of age, and 538 above that period. Last year the number affected at the infant period was 24 per cent. of the total. This year the percentage has decreased, having fallen to 21 per cent.—all the number of infant cases, excepting one of pneumonia, four opthalmia neonatorum, and seven of diphtheria, being those of scarlet fever and tuberculosis.

The number of these notifiable cases, including one or two cases in the Infirmary, treated in Hospital or Sanatorium was 491, or 72 per cent. of the total cases, as compared with 79 per cent. in the previous year.

With reference to the Ward Distribution of these Infectious Diseases, if we consider (which is the proper way) the cases as so many per 1000 of the population of each Ward (or better still, were that possible, as so many per 1000 of the young people in each Ward) we find that Ward 6 with 9 per 1000 stands for the year as the Ward freest from infectious trouble, while Ward 4, closely followed by Ward 1, was the most affected.

The figures for the various Wards are:—

					1924
Ward 1 =	24·8	per 1000 of	estimated	population,	17·7
Ward 2 =	18·7	,,	,,	,,	22·1
Ward 3 =	14·6	,,	,,	,,	9·0
Ward 4 =	29·8	,,	,,	,,	25·8
Ward 5 =	21·6	,,	,,	,,	19·6
Ward 6 =	9·7	,,	,,	,,	12·9

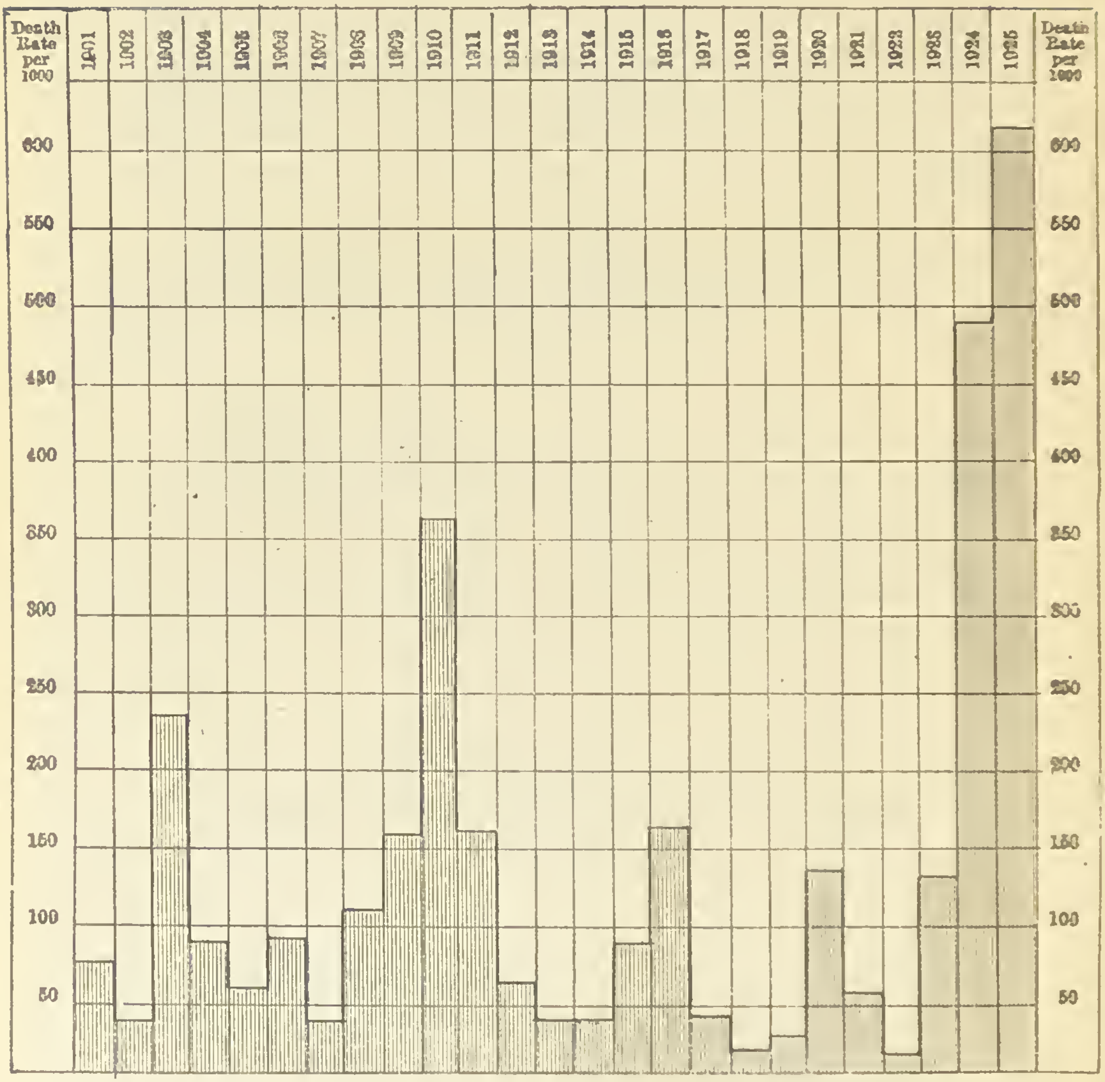
In 1924, Ward 3 was the freest from infectious disease, followed by Ward 6, whereas this year the position is reversed. It may also be noted that, as in the previous year, Ward 4 was the most affected.

TABLE SHOWING THE PERCENTAGE OF CASES TREATED IN HOSPITAL DURING 1925.

DISEASE.	Total.	Treated in Hospital or Sanatorium.	Percentage of Cases treated in Hospital.
Smallpox, ...	...	...	...
Typhoid Fever, ...	8	8	100
Oph. Neonatorum, ...	4	...	...
Pneumonia, ...	12	4	33
Scarlet Fever, ...	563	435	77
Diphtheria, ...	11	11	100
Erysipelas, ...	25	5	20
Infective Jaundice,	3	...	...
Phthisis, ...	26	8	29
Tuberculosis (other than Phthisis),	31	21	67
Puerperal Fever, ...	1	...	...
Total, ...	684	492	72

SCARLET FEVER.

Chart showing the Number of Cases of Scarlet Fever notified during the past Twenty-Five Years.

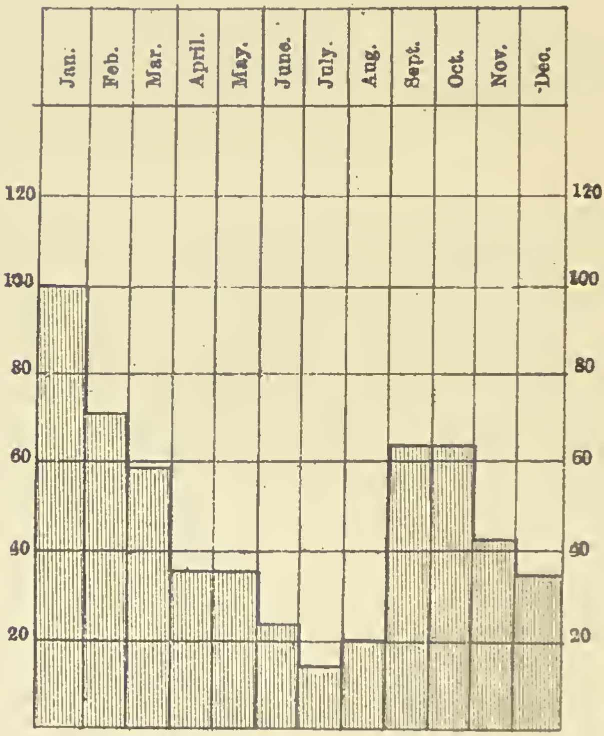


A glance at the chart recording the cases during the past twenty-five years will clearly show the tendency of this disease to lie more or less quiescent for some years and then manifest itself.

In 1922 only 19 cases were notified, followed in the following year with 138. In 1924 there was an increase of 357. This year there was a further increase, this figure being exceeded by 68, viz.:—563, and constituting a record in the annals of the city. As will be noted from the monthly chart, the disease was most prevalent in the first quarter of the year. This was really a continuance of the epidemic of the previous year, in fact it may be said that the worst period of the epidemic was during the six months—October 1924 to March 1925. The lowest point reached was during the holiday season, viz.:—July and August, the cases for these two months being 14 and 20 respectively. With the opening of the schools there was a recrudescence, but since November the disease has been on the wane.

During the first quarter of the year there were 230 cases or 40 per cent., followed by 16 and 17 per cent. in the second and third quarters. while the fourth quarter was responsible for 25 per cent. The greatest number in any one month occurred in January, when 99 cases, or 22 per cent. of the total, were notified. This was followed by the month of February, when there were 72 cases. As already stated, the lowest number in any single month was in July, viz., 14.

CHART SHOWING THE NUMBER OF CASES OF SCARLET FEVER DURING THE YEAR 1924.



As regards the sex, 345 cases occurred among females and 218 among males; while as regards the age period, 121 occurred among children under 5 years of age, or 21 per cent. This is a much lower percentage than the previous year, when it stood at 27 per cent. As regards the other age periods, 337 or 60 per cent. occurred between 5 and 15 years, 71 or 12 per cent. between 15 and 25 years, 31 or 5 per cent. between 25 and 45 years, while there were 3 cases between 45 and 65 years, the oldest being 64 years of age.

As regards the Ward Distribution, Ward 6 is the lowest with 7 per 1000, followed by Ward 3 with 12 per 1000. Ward 4, followed by Ward 2, had the highest. The figures relating to the various Wards for 1925, with comparison for 1924, are as under:—

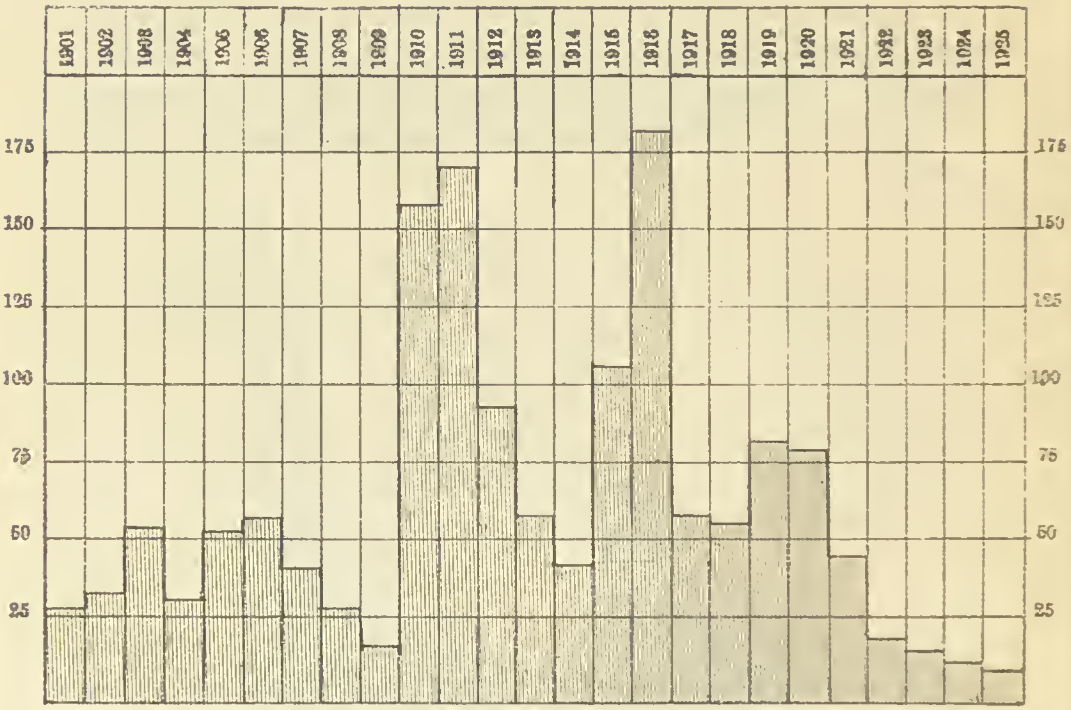
		Cases.	1924.
Ward 1	...	121 or 19 per 1000,	14 per 1000.
Ward 2	...	99 or 14 per 1000,	19 ,,
Ward 3	...	66 or 12 per 1000,	7 ,,
Ward 4	...	128 or 25 per 1000,	20 ,,
Ward 5	...	126 or 18 per 1000,	15 ,,
Ward 6	...	25 or 7 per 1000,	8 ,,
		563	

The number removed to Hospital was 435, or 77 per cent. of the whole. In the previous year the percentage was 83.

During the months of the first quarter of the year, when the epidemic was at its maximum, the type of fever was more virulent, with a corresponding degree of complications. Notwithstanding, the mortality rate was not high. There were 11 deaths, representing a death rate of ·331 per 1000, or a case mortality of only 1·9 per cent as compared with 2·2 in the previous year.

DIPHTHERIA.

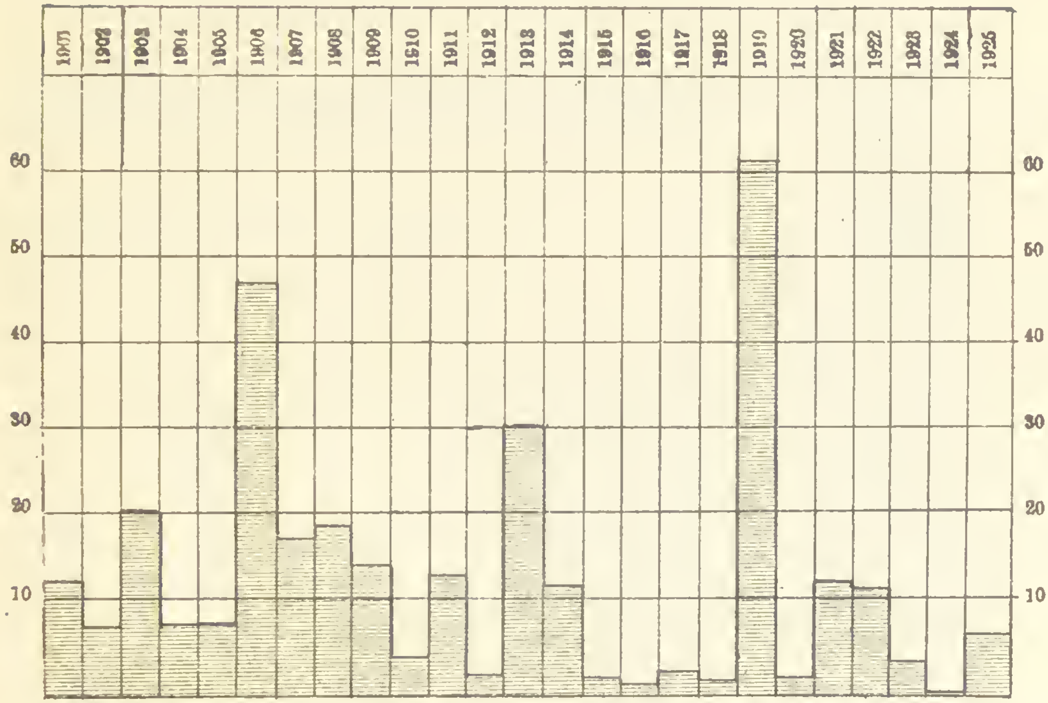
Chart showing the Number of Cases of Diphtheria during the past Twenty-Five Years.



Diphtheria, which was epidemic in the City during 1910 and 1911, and again in 1916, in common with the country generally, has this year reached a level never before attained to my knowledge in Perth, the total number of cases notified being 11, as compared with the previous record of 13 in 1924. Of these 11 cases no less than 3 proved to be diseases other than Diphtheria. There were two deaths. Four of the cases were under 5 years of age, the others, excepting one at 20 years, were between 5 and 10 years.

TYPHOID FEVER.

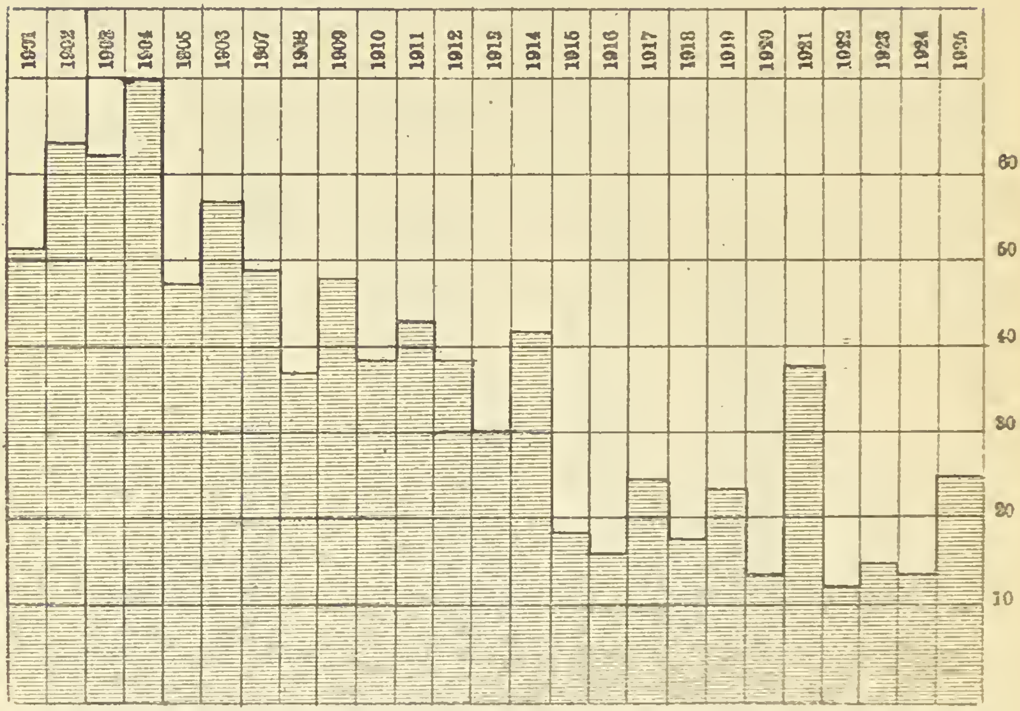
Chart showing the Number of Cases of Typhoid during the past Twenty-Five Years.



During the year 8 cases of Typhoid Fever were notified, as compared with 1 in the previous year and 6 in 1923. Of these cases two were County cases which had been admitted into the Royal Infirmary. In all, four cases were notified from that Institution. All cases received either Infirmary or hospital treatment. Of the city cases one terminated fatally, giving a case mortality of 16 per cent. The ages of the patients were 2 from 5 to 15 years ; 2 from 15 to 25 years and 2 from 25 to 45 years. Most of the cases occurred in October, and in view of their water supply being from the low level and the upper filter bed having been recently disturbed I, with previous experiences of typhoid outbreaks in mind, issued a note to the public advising the boiling of the water.

ERYSIPELAS.

Chart showing the Number of Cases of Erysipelas during the past Twenty-Five Years.



This disease showed a slight increase during the year, 25 cases, as compared with 14 in 1924, being notified. As is usual with the disease, the great majority of the cases were among people well up in years, 7 occurring in persons from 25 to 45 years of age, 8 from 45 to 65 years, and 3 over 65 years.

It is only under exceptional circumstances that such cases are removed to Hospital—such, for instance, as residing in a caravan or lodging-house, or where it is impossible for the affected person to get the attention necessary. No case is removed for fear of the disease affecting others. Five cases were treated in Hospital, representing 20 per cent. of the total cases.

PUERPERAL FEVER.

Two cases of this fever were reported during the year. One case terminated fatally.

CEREBRO-SPINAL FEVER.

No case of this disease occurred during the year. In the previous year there was one case.

ENCEPHALITAS LETHARGICA.

There were no cases of Sleeping Sickness reported during the year, as compared with two in 1924.

INFECTIVE JAUNDICE.

Three cases were notified, two cases occurring in one family. In no case was the disease associated with the rat, which is held to be the carrier.

CITY HOSPITAL, EDINBURGH ROAD, PERTH.

Return of Patients for the Year 1925.

DISEASE.	In Hospital at end of 1924.	Admitted	Dis-charged.	Died.	Remaining in Hospital.	Age of Patients Admitted.	
						Under 5 years.	Over 5 years.
Scarlet Fever ...	74	459	493	12	28	106	353
Diphtheria ...	...	*10	9	1	...	3	12
Typhoid Fever	...	5	4	1	...	...	1
Erysipelas ...	...	5	5	...	...	...	3
Puerperal Fever	...	...	...	...	...	...	...
Whooping Cough	...	...	...	...	...	...	...
Measles ...	...	9	7	1	1	8	2
Observation ...	...	...	...	...	...	...	..
Total Zymotic Cases	74	488	518	*15	29	117	371

* Three of the cases sent in as Diphtheria proved to be another disease.

The total number of admissions during the year 1925 was 488, as compared with 471 in the previous year; and the number admitted since the opening of the Hospital on 30th October, 1906, is 3908.

There have thus been 17 more cases admitted than in 1924, and this is the greatest number ever admitted in one year.

The number of Scarlet Fever cases, including 24 admitted from the Burgh of Crieff during the year, was 459, and is 44 more than in 1924.

This is the largest number of Scarlet Fever cases which have been admitted into hospital for treatment, the nearest approach to it being in the previous year with 415 and in 1910 with 231.

The average monthly number admitted was 40, but there was considerable variation in the numbers throughout the year. Thus the average monthly number admitted during the first quarter of the year was 59, second quarter 28, third quarter 37, and fourth quarter 35. The greatest number admitted in any one month was 81 in the month of January, and the least number was in July, viz., 21, and of this number 8 belonged to Crieff. The periods of greatest strain on the hospital were January and February, September and October, and when, moreover, it is noted that of the 459 Scarlet cases, no less than 106 were infants, *i.e.*, under school age, and that the nature of the disease was often of a virulent type, necessitating in many cases constant attention, one can gather some idea of the work undertaken by the nursing staff.

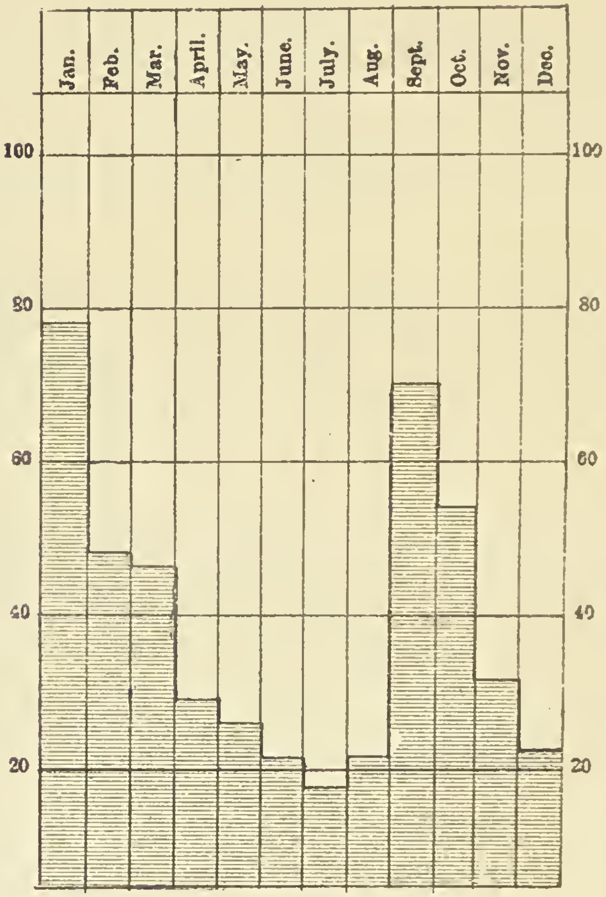
One fortunate circumstance was that, apart from Scarlet Fever, there was practically little infectious disease. The result was that the Diptheria and Typhoid Wards and the Convalescent Hospital were available for the reception of Scarlet Fever cases, but the Smallpox Hospital at the Shore was not required.

The average stay in Hospital has been greater this year. This was due to the type of disease being of more than usual severity and causing more than the usual number of complications. In fact, I do not recall ever having seen such a high percentage of cases with enlarged glands or discharging ears. In 1919 the average stay in Hospital was 35 days, previous to which it was 6 weeks. In 1920 = 32 days, 1921 = 28 days, 1922 = 24 days, 1923 = 23 days, 1924 = 32 days, while this year it was just on 37 days.

Of the 351 discharged cases—8 were in a period less than 3 weeks, 165 were in a period of 3-4 weeks; 189, 4-5 weeks; 55, 5-6 weeks; 17, 6 7 weeks; 12, 7-8 weeks; 9, 8-9 weeks; 9, 9-10 weeks; 8, 10-11 weeks; 4, 11 12 weeks; 3, 12-13 weeks· 2, 13-14 weeks, and one over 14, 15, and 16 weeks.

From figures like these, it is evident that the period of stay in hospital is an unfixed quantity, and that the popular view of six weeks detention is both a minimum and maximum period necessary for isolation is an erroneous one. Every case must be judged by itself. By the procedure carried out at the hospital during the past 6 years, the public are gradually being educated to the fact that many cases cease to be infectious as early as three weeks. The shortest period was 10 days and the longest 115 days.

CHART SHOWING THE MONTHLY ADMISSIONS OF SCARLET FEVER CASES FOR THE YEAR 1925.



Five cases of Typhoid Fever were under treatment during the year. The type was, in two of the cases, of more than moderate severity, and one of these had a fatal termination. This gives a case mortality of 20 per cent.

As regards the other diseases treated in the Hospital, it may be observed that 9 cases of Measles were admitted in the earlier part of the year, with one death, a mortality of 1 in 9 cases as compared with 1 in 41 of Scarlet Fever. During the year no case of Tuberculosis received treatment. These cases are now provided for at Hillside Homes or Noranside Sanatorium. Of the 10 cases of Diphtheria, several proved to be another disease. One death resulted, giving a case mortality of 10 per cent.

It is proposed to carry out certain structural alterations this year:—

ADMINISTRATIVE BLOCK.

The present sleeping accommodation for the nurses now proving inadequate, it is intended to construct additional bedroom accommodation above the present kitchen.

This new addition will consist of two double bedrooms, two single bedrooms, boxroom, bathroom, and w.c.

When the foregoing extension is completed, the existing Matron's bedroom on the ground floor will become the maids' sitting and dining room.

After these alterations are effected, re-painting the existing staff bedrooms will be undertaken.

SCARLET FEVER BLOCK.

The existing heating arrangements consist of central open coal fires, and their construction has been found unsatisfactory.

The new system proposed is Low Pressure Hot Water, circulated from a sectional boiler erected underneath the floor in the basement with radiators throughout, while valves for the appropriate distribution of the heat will be introduced at convenient places.

MATERNITY AND CHILD WELFARE CENTRE.

Committee.

President—Mrs. Howman.
Vice-President—Miss Maxtone Graham.
Hon. Secretary—Miss M'Nab.
Hon. Treasurer—Mrs. Vass.

Lady Georgina Home Drummond.
Mrs. Lindsay.
Mrs. J. Ritchie.
Mrs. Thomson.
Mrs. Falconer.
Mrs. M'Innes.
Miss Wilkinson.
Miss Murdoch.
Miss Duncan.
Mrs. Sharp.
Mrs. Mowat Wilson.
Mrs. J. Miller.
Mrs. J. Wood.

Voluntary Workers.

Miss Buchan.
Mrs. Forbes.
Mrs. Ross.

This Institution has now been in existence for 8½ years, and continues to be not only a popular rendezvous, but a fruitful source of instruction. The work of organizing and managing it is, as it should be, done by ladies, for the work and interest belong mainly to the sphere of womanhood. Perth has been distinctly fortunate in its Ladies' Committee, which has willingly given a great deal of time and devoted much attention to the work, and it has had its reward in the knowledge that its work has been appreciated by the mothers attending the Centre.

It is therefore with pleasure that I have to record another year of progress in this Branch of Public Health, and while recognising that the duty of bringing up children belongs to the mother, and that we must not be too ready to relieve them of their responsibility, yet we must see that the rights of the children are not ignored, and that the mothers have the opportunity given them of learning how best to rear their children.

Ignorance of baby management is the cause of baby not thriving in so many cases—Hospital experience bears this out. It simply means that the mother lacks the intelligence or the care to feed and manage the baby properly, and to combat this ignorance is the problem of the Welfare Centre, and this is best done by the Health Visitors going and visiting the parents *in their own homes*, where the mothers are taught and their ignorance dispelled more effectually in this way than any other. The mothers get confidence in the Health Visitors and soon seek their help and advice.

There cannot be the smallest doubt that the results of health visiting are good; even if they do not bear fruit at the moment they will certainly do so in the next few years As the mother becomes better instructed and as they leave some of their ignorance and antiquated ideas behind, so will there be a reduction in infant mortality. It is not to be expected that the visit of the Health Visitor will always be successful. Failures there will be, and must be expected. But with the great majority the Health Visitor succeeds, nay, her visits are looked forward to, and the anticipated visit is, in many cases, reflected in a cheerier, cleaner, and brighter household than at her first call. At anyrate, instruction is brought within the reach of every mother, no matter how poor or how ignorant—in fact the visits of the Health Visitor will be proportionate to the poverty and gnorance of the mother, and it is the mother's misfortune—and children's also—if she remains unimproved.

Yet it would be unchristian to put all the blame on the mothers. Worn out by domestic work, little or no sympathy and help from the father, insufficient money to keep the house, are all factors which it is so easy to underestimate.

As will be gathered from the attendances, the Centre has proved itself a popular rendezvous, where the large majority of mothers are not only keenly anxious to learn anything relating to the welfare of their child, but gain information useful to the conduct of their domestic affairs.

The Centre is fortunate in its "Ladies Committee," of which

Mrs. Howman is President and Miss M'Nab, Secretary, the members of which are thoroughly imbued with the importance of the work, and the amount of good work performed by this voluntary organisation in the tilling of the soil for the welfare of the children cannot be over estimated. The sympathy and kindness extended to the mothers has probably been the main factor in the Centre's success. All are made welcome and all are made "at home." On the other hand mothers are taking an increasing interest, and are finding it profitable in more ways than one. But the labours of the Committee have not been confined to conversations with the mothers, although the social element has never been lost sight of, nay, is made the most of, and a Sewing Class started in 1919 has been one of the most successful branches of the work.

The class meets on Wednesday afternoons throughout the winter months, and from the regularity of the attendance it is evident that the mothers appreciate it. Many new garments are made, but the re-making of old ones is the chief feature, and many a most unlikely article—cast off garments, legs of stocking, &c.—has been transformed into a useful article for baby.

The garments cut out during the year numbered 175, and many articles of the mother's workmanship were exhibited in the windows throughout the year.

The class started on the Wednesday evenings three winters ago for young women and those mothers who were unable to attend the afternoon session has been continued, and it is pleasing to record that the attendance of the younger members has been very gratifying, and that much good work is being done.

Another important feature which has continued to meet with success is the Savings Bank. This branch is under the able superintendence of Mrs. Vass, Benview, Mrs. Ritchie, Rockbank and Miss McNab, Fitzroy Terrace. Anything from a penny upwards is received, and the mother is free to take any or all whenever she desires. The number of depositors during the year was 163, being an increase of 8 over the previous year, and the sum deposited

£22 8s. 2d. Money was withdrawn to the extent of £20 11s. 10d., and it is pleasing to record that in nearly, if not in all instances, the money was withdrawn in order to buy something for baby, the purchase generally being made from the Work Stall of the Centre, which is under the supervision of Mrs Lindsay. It may be stated that these goods are the work of the Needlework Guild. This Guild consists of 50 members, of whom Mrs. Thomson, Magdalen Bank, is Convener. It has rendered most valuable work, and a work highly appreciated by the mothers. Every article is sold to the mother at the bare cost of material. Thanks are also due to many of the Church Work Parties who contributed many serviceable articles of clothing.

The number of depositors in the first year was 66, and the number on the roll at the end of 1925 was 163. The following is a record of the year's work :—

	£	s.	d.
Balance at 31st December, 1924, ...	£23	11	7
377 Deposits lodged during 1925, ...	22	8	2
	£45	19	9
36 Withdrawals during 1925, ...	20	11	10
Balance at 31st December, 1925, ...	£25	7	11

Of this balance, there has been placed to the Savings Bank Central Fund (baby bank) the sum of £17 13s 6d, on which interest had accrued to the amount of £2 15s 3d. When baby's bank account reaches £1, this is placed into a personal Savings Bank Book. This book is kept at the Centre until the child reaches school age.

During the year 9 mothers realised their ambition of having a personal savings bank book, and the amount, exclusive of interest, standing to their credit is £8 19s 6d

Unemployment during the year hit the bank very badly, but to the mother's credit, unless circumstances made it absolutely essential, baby's bank book remained untouched, and even then a shilling was left in order to keep the bank account open.

On January 26th, a most successful tea party to the mothers, toddlers and babies attending the Centre was arranged by the Ladies' Committee. The attendance was most gratifying (close on 400) and the function much enjoyed. Several members of the Ladies' Committee, along with friends, contributed in a large measure towards the success of the function, while mention must be made of Miss Martin, Miss Connell, and Miss Smart, who arranged the singing and dancing parts of the programme, and Mrs. Bruce, Murthly, Miss Murdoch, and Miss Duncan, who were responsible for the Christmas tree and other decorations.

On 29th July, Lady Georgina Drummond once more showed her kindness by opening the grounds at Hamilton House. Nature was in its kindest mood, and with tea, music and games, a happy afternoon was spent by a gathering of about 400.

The average attendance of mothers and babies at the Centre was 354 per month, as compared with 390 in 1924, 346 in 1923, 324 in 1922, 265 in 1921, and 177 in 1920.

HOME VISITATION.—(1) Infants—Number of first visits, 510; number of re-visits, 6175; number of infants at age of 6 months—(1) Breast-fed, 143; (2) Partially Breast-fed, 21; (3) Bottle Fed, 47. Number of infants born (1) prematurely, 29; (2) full time, 533. (2) Children (1 to 5 years)—Number of first visits and re-visits, 977; (3) Expectant mothers, 231.

The number of medical consultations at the Centre during 1925 was 187, as compared with 233 in 1924.

The following gives an idea of the cases presenting themselves:—Skin Diseases, 20; Infectious Disease, 7; Gastro-Enteritis, Diarrhœa, 22; Hernia, 4; Wounds, Bruises, Burns, 13; Bronchitis, 7; Enlarged Glands, 10; Tongue tied, 3; Rickets, 3; Tuberculosis, 3; Phymosis, 4. Vaccination was performed on 10 occasions.

MIDWIVES (SCOTLAND) ACT, 1915.

(1) *List of the Midwives* (with their Names in alphabetical order, Enrolment Numbers and Addresses) who have up to 31st January, 1926, given notice under Section 18 of their intention to practice in the District.

LIST OF MIDWIVES, JANUARY, 1925.

Reg. No.	NAME.	ADDRESS.
2370	Isabella Anderson, - -	9 Commercial Street.
2228	Mary B. Barclay, - -	32 Caledonian Road.
2329	Margaret Beveridge, - -	Bonnieview, Cherrybank.
5455	Christina M'Nab Cameron,	Garage House, Station Hotel.
804	Hannah B. Clark, - -	Balhousie Gardens.
2490	Fanny Cochrane, - -	51 Kinnoull Causeway.
5182	Margaret Dickson, - -	2 Robertson's Buildings.
4323	Margaret M'Gregor Doig, -	2 Florence Place.
2428	Margaret J. Forbes, - -	12 Tay Street.
1898	Elizabeth Laing, - -	20 Market Street.
578	Isabella H. Mackay, - -	Braehead, Jeanfield.
2583	Ann M. Malcolm, - -	19 Barossa Street.
4014	Lilias Moncrieff, - -	36 Jeanfield Road.
2289	Catherine R. M'Lean, -	8 Hospital Street.
1775	Annie M'Quhae, - -	11 Gowrie Street.
2456	Jessie A. Rattray, - -	36 George Street.
2479	Annie Robertson, - -	18 Watergate.
3014	Agnes Shilland, - - -	6 Hawarden Terrace.
3175	Margaret Williamson, -	30 South Street.
6148	Catherine Whytock, - -	58 Scott Street.

(2) Births in Area or District.

Total Number of Births during 1925.	Total Number of Deaths of new-born children (within ten days) during 1925.	Actual Number of Births attended by Midwives during 1925.	Actual Number of Deaths of new-born children (within ten days) occurring in the practice of Midwives during 1925.	Actual Number of Cases not attended by a Doctor or Midwife during 1925.	
				Births.	Deaths.
562.	16.	72.	—	1.	—

(3) Cases of Ophthalmia Neonatorum.

Total Number of Cases during 1925.	Actual Number of Cases occurring in the practice of Midwives during 1925.	Actual Number of Cases occurring where confinement not attended by a Doctor or Midwife during 1925.
4.	2.	—

(4) Cases of Puerperal Sepsis.

Total Number of Cases during 1925.	Total Number of Deaths during 1925.	Actual Number of Cases occurring in the practice of Midwives during 1925.	Actual Number of Deaths occurring in the practice of Midwives during 1925.	Actual Number of Cases occurring where confinement not attended by a Doctor or Midwife during 1925.	
				Cases.	Deaths.
2.	1.	—	—	—	—

(5) Cases of Still-birth (Dead Born).

Total Number of Cases during 1925.	Actual Number of Cases occurring in the practice of Midwives during 1925.
29.	2.

(6) **Cases of Emergency.**—The total number of Cases of Emergency to which medical practitioners have been called in under Section 22 of the Act during 1925 was 2. These related to cases of prolonged labour.

(7) **General Remarks.**—During the year it was unnecessary to take any action in connection with any breach of the Regulations, unless in one instance where a Midwife was reported to the Central Midwifery Board on account of a police offence.

V.D. CENTRE.

The Centre was opened in May, 1923. It is a one storey brick building, and has been erected adjacent to the Out-Patient Department of the Infirmary. Its accommodation consists of (1) Office, (2) Waiting Room, (3) Treatment Room, (4) Rest Room, and (5) Irrigation Room.

It acts as an Out-Patient Clinic, no provision being made for resident cases, and is for the use of both City and County, and the times for consultation are :—

County Patients :—Women—Monday, 3 to 4 p.m.
Men—Thursday, 3 to 4 p.m.

City Patients :—Women—Monday, 6 to 7 p.m.
Men—Thursday, 6 to 7 p.m.

The following is a record of the work done :—

	Syphilis.		Gonorrhœa.		Soft Chancre		Mixed Infections.		Conditions other than Venereal.		TOTAL.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F
Number of New Cases, ...	23	8	21	5	—	—	1	—	15	6	60	19
Number of persons who ceased to attend the Centre *before* completing the course of treatment, ...	3	2	—	—	—	—	—	—	—	—	3	2
Number of persons transferred to other Treatment Centres after treatment, ...	—	—	4	—	—	—	—	—	—	—	4	—
Number of persons discharged from the Centre, ...	10	4	22	6	—	—	1	—	15	6	48	16
Number of persons who, at the end of the year, were under treatment or observation, ...	16	7	2	—	—	—	2	—	—	—	20	7
Total attendances of all persons, ...	349	182	968	92	—	—	included under syphilis.		33	12	1349	408

Area in which patient resided :	City Area.	County Area.	Other Scottish Areas.	TOTAL.
Number of persons from each area dealt with during the year for the first time :—			1 Stirling	
(*a*) Syphilis, ...	24	7	—	31
(*b*) Gonorrhœa, ...	23	2	1	26
(*c*) Soft Chancre, ...	—	—	—	—
(*d*) Mixed Infections. ...	—	1	—	1
(*e*) Conditions other than Venereal, ...	15	6	—	21
Total, ...	62	16	1	79
Total number of attendances at Out-patient Department.	1152	487	18	1757
Number of doses of Salvarsan substitutes,	233	137	—	370

Age of persons treated.	Syphilis		Gonorrhœa		Mixed Infections.		TOTAL.	
	M.	F.	M.	F.	M.	F.	M.	F.
(*a*) Under 1 year, ...	1	—	—	1	—	—	1	1
(*b*) 1 and under 5 years.	—	—	—	—	—	—	—	—
(*c*) 5 ,, ,, 15 ,, ...	3	1	—	—	—	—	3	1
(*d*) 15 ,, ,, 25 ,, ...	1	2	13	3	—	—	15	5
(*e*) 25 years and upwards, ...	18	5	8	1	—	—	26	6
Totals, ...	23	8	21	5	—	—	45	13

FACTORIES AND WORKSHOPS.

Many inspections were made during the year of the Factories and Workshops, including the Bakehouses, and some improvements effected. These related to five cases of want of cleanliness.

Speaking generally, it must be said that the management of the Factories and Workshops is conducted in a manner whereby the interests of the workers in matters relating to their general health are well looked after, and I feel sure that Perth will compare favourably with any city in the kingdom.

There are three underground bakehouses in the Burgh; and in accordance with the Factory and Workshops Act of 1901 these were granted Certificates by the Local Authority, the requirements of the Act being fulfilled in all respects.

As certifying Factory Surgeon, I examined for fitness for employment in factory or workshop, a total of 185 young persons, or 102 less than the previous year. Of these 59 were males, and 126 were females. This shows as compared with the previous year an increase of males employed, viz. 1, but a considerable decrease in the number of females, viz., 103. The figures for 1923 were 45 males and 139 females. All must have attained the age of 14 before being allowed to work.

This year I rejected 11 as unfit for work, being 10 less than in the previous year and all on account of uncleanliness. Extreme cases of head lousiness have been, in recent years, very much reduced, yet the number of people actually infected is large. Broadly speaking, the less educated people are, the more they tend to harbour head lice. Poverty, bad housing, bad sanitation, it can safely be said, render cleanliness a condition more difficult to obtain, yet they certainly are not a bar, and one comes across many cases of vermin infection where they do not exist.

In each instance it was the condition of the hair which was at fault, and all the cases occurred among girls. These cases are sad, in respect that the cause is easily removable and implies a want of care and disregard for the most elementary laws of health. All such cases are subject to re-examination before being allowed to work. Some parents think the penalty of their children not being allowed to work too severe for the crime, but a little reflection shows how unfair it would be to the other employees. Moreover the cure is easy.

WATER SUPPLY.

Perth, in addition to supplying water to its own inhabitants also provides water for the district of Scone.

The number of reservoirs is five, one at Wellshill (430,000 gallons), Viewlands (830,000), Muirhall (1,800,000), and two at Burghmuir (each 2,000,000). The total capacity of these reservoirs is 7,060,000 gallons, and this, with a daily supply (for trade and domestic purposes) of about 2,200,000 gallons, indicates a storage of little over three days' supply.

The total quantity of water pumped in 1925 was 802,656,200 gallons, being a decrease of 9,655,800 gallons, as compared with the previous year.

The water supply by meter was 210,006,000 gallons, as compared with 204,684,000 in 1924. This shows an increase of 5,322,000 gallons. In addition, 36,000,000 gallons are supplied by agreement.

In other words a total of over 556,656,000 gallons of water have been used for domestic purposes. This implies a daily supply of over 1,525,000 gallons, and, based on a population of 36,000, gives a daily supply per head of 42 gallons.

In my last year's report I stated that the question of the provision of a water supply to the City had reached a stage whereby the Town Council had decided to take a gravitation water supply from Loch Ordie, and for this purpose a Provisional Order had been promoted. In July this Order was submitted before a Parliamentary Commission who found the Preamble proved. After the municipal elections in November the Town Council withdrew the Petition for the Order, and a new Special Water Committee was appointed to investigate an alternative to the Gravitation Supply. The following Reports bear on the proposal to obtain the City's water supply from the gravel and sand bank opposite the Woody Island.

Laboratory of City Analyst,
Minto House,
20 Stafford Street,
EDINBURGH, 22*nd June*, 1925.

Messrs. BRAND, TAYLOR, BELL & OTHERS.

RESULTS of Analysis of 2 Samples of Water received from Messrs. Hunter, Duff & Middleton on 16th June, 1925—Marked "No. 1" and "No. 2."

One imperial gallon of each of these waters contained the following ingredients. The results are expressed in grains.

	No. 1.	No. 2.
Total Solid Matter	4·80	4·80
Organic and Volatile Matter ...	1·76	1·76
Mineral Matter	3·04	3·04
Chlorine in Chlorides	0·42	0·42
Phosphates	None	None
Iron	Faint Trace.	Faint Trace.
Lead or other Poisonous Metals ...	None	None
Nitrogen in Nitrates	0·032	·064
Nitrites	None	None
Saline Ammonia	None	None
Albumenoid Ammonia	None	None
Ogygen absorbed at 80°F. in 4 hours	0·019	0·011
Total Hardness (Clark's Scale) ...	3·	3·
Temporary Hardness (Clark's Scale)	—	—

These waters, as is shown by the above analysis, are of satisfactory chemical purity. They are very soft, contain very little organic matter, and are in my opinion quite free from any indication of contamination. They are very suitable for all primary purposes, and are, in my opinion, as good and pure as one could desire for a water supply.

(Sgd). A. SCOTT DODD.

42 Frederick Street,
EDINBURGH, *30th Nov.*, 1925.

PERTH WATER SUPPLY.

REPORT to the Water Investigation Committee by Messrs Hunter, Duff & Middleton, Civil Engineers.

In view of the investigations that have been carried out, we are now able to report to you upon the proposal to obtain a supply of water for the City of Perth from the gravel and sand bed opposite the Woody Islands, and to have it pumped in the requisite quantities to the reservoirs at Muirhall, Burghmuir and Viewlands, the reservoir at Wellshill being retained for distribution purposes only. We have also to consider the question of additional storage at Viewlands, and the proper chlorination of the water.

Before going into the details of the necessary works to give effect to these proposals, it will be convenient to describe the present storage capacity and the water required in the different zones of supply.

The main pumps raise water to four different reservoirs at varying altitudes, and from the following figures of capacity and daily supply, taken from the information submitted to the Commissioners at the recent Inquiry, it will be seen that the bulk of the water is pumped to the low reservoirs.

Reservoir.	Altitude.	Average Water per 24 Hours.	Capacities.
Wellshill,	72·00	840,000 gals.	430,000 gals.
Viewlands,	203·40	1,219,000 do.	830,000 do.
Burghmuir,	330·00	220,000 do.	4,000,000 do.
Muirhall,	400·00	175,000 do.	2,000,000 do.

It is proposed to pump the bulk of the water up to Viewlands and only as much as is required to Burghmuir and Muirhall. As will be seen from the above table, those two Reservoirs require to have a supply between them of 395,000 gallons per day or about 16 per cent. of the total supply.

Each of the four reservoirs is at present supplied through a 12-inch pipe. Three of these are used as pumping mains only, but the one supplying Wellshill gives off supplies to the city as the water is being pumped. The pipe to Viewlands must be very badly incrusted, for the head at the pumps as shown by the pressure guage is very much above the static head, showing a great loss of power due to friction in the pipes.

THE PROPOSED NEW WORKS.

I. Source of Supply.

At the Woody Islands source, the works would be as follows :—

A series of collecting culverts would be constructed in the gravel bank on the left bank of the Tay opposite Woody Islands. These would be set at an angle to a main culvert or pipe running through the gravel bed in the line of the flow of the river. Each would be connected to the pipe through a manhole by which any branch culvert could be cut off from the pipe and access had to that culvert for inspection. The culverts would have an aggregate length of at least 1000 feet.

A 30-inch diameter pipe would be laid from the end of the collecting pipe down the left bank of the Tay a distance of about 700 yards. At this point the river would be crossed by means of two 24-inch pipes, the formation of the bed of the river here being such that the crossing can readily be made in ordinary summer months. The two 24-inch pipes would be led into a sedimentation chamber on the right bank of the river, so that any sediment or sand grit might be intercepted before getting to the pump well. From the chamber the water would be conveyed along the right bank of the Tay in a 30-inch diameter pipe to the main Pumping-Station at Tay Street. All these pipes after incrustation would be able to discharge three million gallons a day.

II. Chlorination.

The water would be chlorinated on arrival at the Pumping-Station, an up-to-date Chlorination plant being installed similar to the type provided by the Paterson Engineering Company to the Metropolitan Water Board. This plant should be under the supervision of a duly qualified man.

III. Pumping.

The next part of the Scheme is to alter the pumping arrangements so that all the water required for the mid and low level districts will be pumped to a new Reservoir at Viewlands. On referring to the above table it will be seen that this means that 2,059,000 gallons per day will be pumped to Viewlands. The existing 12-inch pipe already referred to is too small and too much deteriorated for the purpose, and a new 20-inch pipe would have to be laid from the Pumping-Station to Viewlands.

We have had an interview, and subsequent correspondence, with Mr W. A. Ker, M.Inst., C.E., who reported in December, 1924, on the condition of the pumping plant. This report was incorporated in Mr Easton's report of 10th January, 1925, a copy of which, we understand, was supplied to the Town Clerk of Perth. He is satisfied that each of the existing engines and pumps would be able to pump three million gallons per day to the new reservoir at Viewlands, and to Burghmuir and Muirhall.

We should mention here that there is at present no proper method of measuring the water pumped to the various reservoirs, but accepting the figures available it would appear that practically 2¼ million gallons per day is being pumped or 75 per cent. of 3 million gallons per day. In order to have the proper quantities of water pumped to Viewlands, Burghmuir and Muirhall, a slight modification would have to be made on the barrel of the high lift pump. The pumps would then be run uniformly for 18 hours per day to supply 2¼ million gallons, resting the remaining six hours, or in some similar periods of work and rest, and in this way the churning and knocking referred to by Mr. Ker in his report would be obviated.

At present the coal consumed pumping 2¼ million gallons is 34 tons per week. Under the new arrangement, for the same quantity of water pumped, the coal consumed would only be two or three tons per week more for, while our proposal to pump the Wellshill water to Viewlands will make the lift greater, the substitution of a 20 inch pipe to Viewlands in place of the 12-inch now in use will, on the other hand, reduce the friction head. When 3 million gallons per day are required the consumption of coal would be increased about 16 tons per week. The additional charge for this coal would be incurred only if and when 3 million gallons per day were required.

IV. STORAGE.

The proposed new reservoir would be constructed on land to the north-west of the existing reservoir at Viewlands. It would be open, made by earthen embankments in horse shoe form on the slope of the hill, the face of the embankments and the bottom of the reservoir being lined with concrete so as to maintain the purity of the water. The reservoir would have a capacity of about 12,000,000 gallons, which is sufficient to give 5 days storage for the supply of the mid and low level districts when the total supply of Perth has risen to 3 million gallons daily. The high level districts are already well supplied with storage. The estimate, given hereafter for the new reservoir, is based upon the understanding that the ground is of a water tight and otherwise suitable nature. In the event of its not being water-tight ground, another method of construction would be adopted, bituminous sheeting being substituted for a puddle trench and wall at an additional cost of about £9000. Permission should be sought to allow proper investigations being made as to the nature of the ground and to allow detailed surveys being made.

The new reservoir would be used in conjunction with the existing covered tank at Viewlands, from which the water would be distributed to the consumers as at present. The 12-inch pipe now used as the pumping main could be utilised in the distribution service, and as a return pipe to fill Wellshill Reservoir supplying the low level district.

ESTIMATE.

We estimate the cost of these works as follows :—

Intake culvert, and 30-inch pipe line from intake at Woody Island to Pumping Station at Tay Street, ...	£55,640
New open concrete lined Reservoir at Viewlands to hold 5 days' supply or about 12 million gallons,	27,000
New pipe line 20 inches diameter from the Pumping Station at Tay Street to the new Reservoir at Viewlands, ...	14,000
Connecting new Reservoir with existing Reservoir at Viewlands, ...	1,200
New connections on distributing pipes	1,000
Chlorination Plant, similar to Paterson Engineering Company's Chloronome, Manometer Type ...	550
Altering rams in high lift pumps	270
Land for Reservoir and wayleaves, say, ...	1,000
Say, £101,000.	£100,660

These estimates include 20 per cent. for contingencies and engineering.

The annual working expenses would be increased by the additional coal required at the Pumping Station, which would probably amount to about £200.

With the exception of about £30,000, the cost of the new intake works at Woody Islands and that part of the pipe line in Scone parish, the capital expenditure would be on works within the city, and the rating outside the city consequently small.

We are,

Yours faithfully,

HUNTER, DUFF & MIDDLETON.

---

42 FREDERICK STREET,
EDINBURGH, 21*st December*, 1925.

To the Water Investigation Committee.

DEAR SIRS,

PERTH WATER SUPPLY.

With reference to our Report to you dated 30th November, 1925, we understand that you desire to have from us more particular information as to the quantity of water that could be obtained from the gravel bed opposite the Woody Islands.

At the end of the heading marked "I. Source of Supply," in our Report we say, "All these pipes after incrustation would be able to discharge 3 million gallons a day." In saying so, we meant that the intake culverts and pipes would be designed so as to intercept that amount of water.

We have based our estimate of the extent of the Intake Works upon gaugings of the water made at the test well.

In July last, when the Tay was very low, and the water in the well stood at the level necessary to gravitate the water to the main

Pumping Station, the flow into the well was at the rate of 60,000 gallons per day. The well was 6½ feet square, giving a girth of 26 feet.

It is intended to construct 10 culverts each 100 feet long, running at an angle from the main leading pipe out towards the Tay. The test well was sunk on what would be approximately the line of the main pipe. These 10 culverts would be connected, each under separate control, to the main leading pipe at points 100 feet apart. The total length of the sides of these culverts would be 2000 feet, or 77 times the girth of the well. Owing to their alignment the water would have equal access to both sides of each culvert. In this way they should, relatively to the length of their walls, be expected to draw more water than the well, for the one half of the girth of the well was away from the river, the flow from which would be first intercepted by the side next to the river. The culverts should therefore be depended upon to yield 77 times more water than the well, or 4,620,000 gallons a day. Even if the Tay fell one foot lower than on July last, the yield would still be fully 3 million gallons a day.

These calculations, as already indicated, have been deduced from gaugings in the test well, but it must be borne in mind that the test well was almost entirely close timbered, and this would prevent water getting in freely, whereas the culverts would be constructed in such a way as to allow the water free access.

As the work proceeded there would be every opportunity to test each culvert as it was made, and their number could be added to or reduced as would appear necessary. In the event of a still larger supply being required there is ample space in which to construct additional Intake Works.

As it is certain from past experience that the Tay runs past with a flow never less than from 150 to 200 million gallons a day, it is obvious that a very large quantity of water for the City can be obtained by merely increasing the Intake Works as required.

We are,

Yours faithfully,

HUNTER, DUFF & MIDDLETON.

Burgh Surveyor's Office,
PERTH, *23rd Jan.*, 1926.

OBSERVATIONS on proposed Water Supply from River at Woody Island.

1. The proposed source of supply is within the tidal reach.

2. What is a manhole on each branch culvert for? Access cannot be obtained by it, as the water will stand up at too high a level. If the culvert is of any length water will percolate into it in considerable volume, and a very strong pump would be required to keep it sufficiently free from water.

3. Gravel bank is of comparatively recent formation. A channel flowed between it and Scone Palace Park, evidence of which can be traced.

4. This part of the river has undergone very great changes within recent years, and if works are to be formed as proposed, sooner or later extensive "pitching" will be necessary.

5. Has consideration been given to the distance from the collecting culverts to the Pumping Station as well as the fall? A 30-inch pipe will not discharge, when the water in the river is low, 3 million gallons per day into the well at Pumping Station discharging at the level of the existing 18-inch pipe entering well.

6. By forming such works a "screening," not filtering, of the water will be obtained similar to the present system.

7. These works cannot be controlled as they are under water, and there is no assurance that the water percolates regularly through the gravel or enters the culverts by certain channels only.

8. If the water at this point is pure after passing through the gravel bank, why make provision for chlorination?

9. I would suggest that samples of the water be taken in the river and in the test well after a period of drought followed by a heavy rainfall in the Isla basin.

10. The 30-inch pipe cannot be taken along Tay Street as it would undermine the large outfall brick sewer there, and endanger

the retaining wall. It cannot be laid in river bed except at a very great cost.

11. How are connections to be made to existing pipe entering well without the provision of a temporary well to maintain supply when new works are in progress?

12. It must be taken into account that the proposed works at the Pumping Station, particularly, are subject to water from river and cannot be done except at a high cost.

13. Will existing pumps and boilers do what will be required of them without extension?

14. The soil at Viewlands, in my opinion, is not suitable for the formation of a reservoir such as is proposed.

15. Is it not to be covered in so near Infirmary and town?

16. The new reservoir is not storage in the proper sense, as water is constantly being pumped into it and withdrawn.

17. *Estimate* :—

(*a*) Culvert and Pipe Line—Sum insufficient considering line of track.

(*b*) Reservoir—Sum insufficient for one suited to site, and it should be covered.

(*c*) What line is 20-inch pipe to take? Tunnel may be required under railway.

(*d*) A larger sum must be allowed for alterations on distributing pipes.

(*e*) Extension of Engine and Boiler Plant.

(*f*) In addition to increased fuel there is wages of chemist for chlorination plant in perpetuity.

THOMAS M'LAREN,
Burgh Surveyor.

Perth Water Works,
PERTH, 25*th Jan.*, 1926.

Robert Adam, Esq.,
Town Clerk,
Perth.

Dear Sir,

PERTH WATER SUPPLY.

I beg to submit a few observations on Report by Messrs. Hunter, Duff and Middleton, Civil Engineers, as to supply from gravel bank at Woody Island.

The position of the culverts being in the bed of the river and subject to mountain floods and high tides will very soon close up and will be similar to what we have experienced from the filter at Perth Bridge, while the fall is insufficient to give a full supply to the existing Well at the Pumping Station without the provision of a deeper and larger Well.

When reaching Perth Bridge with the 30-inch main, is it to be laid in the river outside the retaining wall or in Tay Street?

At what point is the connection to be made to the cast-iron well, and how is the town's supply to be maintained during this operation?

(3 Pumping). What route is the 20-inch pump main to take from the works to Viewlands, and how is the railway to be crossed?

Which high lift pump do you refer to that requires to be altered?

No provision has been made for two new Steam H.P. Boilers which will be required.

(4 Storage). The proposed new Storage Reservoir at Viewlands should be a covered one, as the situation is too near the town and a considerable number of trees are close to the site.

The nature of the ground is of an unsuitable nature, and I may state that the existing reservoir was found to be leaking very badly and had to be lined with bituminous sheeting a few years after construction.

To supply Wellshill Reservoir from Viewlands through the existing 12-inch pump main, is it intended to allow the Viewlands pressure into the low level system, and how is the supply to be regulated and controlled to that area? This is very important, as the pressure should not be allowed to rise higher than 100 feet at any time.

Yours faithfully,

(Signed) DAVID STEWART,
Water Manager.

Bacteriological Laboratories,
University New Buildings,
Teviot Place,
EDINBURGH, 23*rd July*, 1925.

REPORT to Messrs. Robertson & Dempster, 3 Kinnoull Street, Perth.

SPECIMENS FROM EXPERIMENTAL WELL AFTER 57 HOURS' PUMPING.

Specimen No. 1—Taken by Mr M. B. Duff, C.E., on 17th July, 1925, at 10.20 a.m., stated by Mr Duff to be water from the River Tay.
17/7/25.
(I take it this specimen was from the river opposite the experimental well).

Approximate number of viable bacteria—

Growing at 37°C	-	275
,, ,, 22°C.	-	552

Excretal B. Coli present in 0·1 c.c.

Specimen No. 2.—Taken by Mr M. B. Duff on 17th July, 1925, at 10.35 a m., stated by Mr Duff to be water from 6 inches under the surface of experimental well.
17/7/25.

Approximate number of viable baeteria—

Growing at 37°C.	-	317
,, ,, 22°C.	-	1242

B. Coli present in 0·1 c.c.

No Excretal or Typical B. Coli in 50 c.c., *i.e.*, the B. Col present are practically all Atypical.

SPECIMEN NO. 3—Taken by Mr M. B. Duff on 17th July, 1925,
17/7/25. at 11·5 a.m., stated by Mr Duff to be water from 9 inches from the bottom of the experimental well.

Approximate number of viable bacteria—

Growing at 37°C.	-	328
,, ,, 22°C.	-	1286

B. Coli present in 0·1 c.c.

No Excretal or Typical B. Coli in 50 c.c., *i.e.*, the B. Coli present are practically all Atypical

SPECIMEN NO. 4—Taken by Mr B. Duff on 17th July, 1925, at 10.50 a.m., stated by Mr Duff to be water from the middle of the experimental well, about 4 feet from the surface.

Approximate number of viable bacteria—

Growing at 37°C.	-	337
,, ,, 22°C.	-	1664

B. Coli present in 0·1 c.c.

Typical B. Coli present in 10 c.c., *i.e.*, the B. Coli present in smaller amounts are Atypical.

NOTE.—All the specimens were taken in sterile stoppered bottles and according to my instructions, and were transported on ice to Edinburgh for examination.

T. J. MACKIE, *M.D.*, *D.P.H.*

THE UNIVERSITY NEW BUILDINGS,
EDINBURGH, 30*th November*, 1925.

MESSRS. ROBERTSON, DEMPSTER, & CO., W.S., 3 KINNOULL
STREET, PERTH.

DEAR SIRS,

PERTH WATER SUPPLY.

In accordance with the request of the Water Investigation Committee that I should give an opinion as to whether their proposed Scheme for an improved water supply for the City of Perth would yield a water which would be satisfactory and safe from the health point of view, I beg to submit the following:—

The Scheme, as prepared on your behalf by Mr M. B. Duff, C.E., consists in taking a supply of water from the River Tay, after natural filtration through a bank of gravel and sand adjacent to what is known as the Woody Islands; this is to be done by constructing an intercepting culvert in the bank, from which the water will be led by gravitation to the existing Pumping Station, Tay Street, Perth, where it will be chlorinated by an efficient apparatus under skilled supervision and then pumped to the existing reservoirs (other than Wellshill) and to a new Reservoir to be constructed at Viewlands; thereafter the water is to be stored before ultimate distribution—in Burghmuir for about 18 days, in Muirhall for about eleven days, and at Viewlands for a minimum of five days—each of these Reservoirs supplying its respective district.

The results of the bacteriological examination of water specimens taken in July 1925 from an experimental well sunk in the gravel and sand bank (referred to above) are appended. I have also carefully reviewed the results of chemical analyses of specimens from the well, carried out by Mr A. C. Dodd, City Analyst, Edinburgh.

From my personal knowledge of the source of the water, taking into consideration also the physical, chemical, and bacteriological condition of the water specimens from the experimental well, and the existing arrangements which have been referred to, I am able to state that, in my opinion, the proposed scheme would yield a supply of water which would be safe from the health point of view, and would, moreover, allow of a sufficient margin of safety.

I am,

Yours faithfully,

T. J. MACKIE, *M.D., D.P.H.*
Irvine Professor of Bacteriology,
Edinburgh University.

33 Princes Street,
PERTH, 1st *February*, 1926.

The Town Clerk,
PERTH.

Dear Sir,

WATER SUPPLY.

With reference to your letter of 28th ult., desiring any observations on my part on the Report submitted by Messrs. Hunter, Duff & Middleton, I presume this refers to that portion bearing on the Chemical and Bacteriological examinations.

The Chemical Reports of Mr A. Scott Dodd on Samples No. 1 and No. 2, which I take to refer to River Tay and Experimental Well respectively and the figures to indicate grains per gallon are practically identical, excepting that the "Nitrogen in Nitrates" in No. 2 is double that of No. 1, viz.:—·064 to ·032. This Nitrogen expressed as Nitrate of Soda would be, I think, ·36 and ·18. One means by which Nitrates are generated is oxidation of the organic refuse discharged into water, and it is possible, if not probable, that its presence is due to this cause. The quantity is considerably more than has been noted in previous examinations of Tay water, where the amount varied from nothing to ·06.

What, however, has impressed me in this portion of the Report is the absence of Albuminoid Ammonia in both samples. Reports of previous analyses of Tay water whether taken direct from the river or from the filter bed have always shown it to be present, varying from ·005 grains to ·008 grains per gallon. To me the entire absence of albuminoid ammonia appears incredible, particularly in view of the fact that the analyses of other water supplies show its presence thus:—

Glasgow	·072	per 1,000,000 parts.
Paisley	·116	,, ,, ,,
Stirling	·090	,, ,, ,,
Tay	·114	,, ,, ,,
Loch Ordie	·157	,, ,, ,,

I therefore incline to the view that there must be albuminoid ammonia present, and if any further support to this view is required I believe it to be furnished as per Report by the presence of organic and volatile matter to the extent of 1·76 and the fact that oxygen is absorbed ·019 in No. 1 and ·011 in No. 2.

With reference to the Bacterial Report, the number of micro-organisms given refer, I presume, to the number present per cc. Sample No. 1 from the river shows a much smaller number than from the three samples taken from the Experimental Well, viz.:—552 as compared with 1242, 1286 and 1664. Further examinations alone can determine whether the latter figures will in time gradually diminish. As it is, the number is so excessive as to excite suspicion. What I believe, however, to be more material in the minds of water experts is the nature of the bacteria, and for this purpose the presence and number of the Bacillus Coli is taken as a guide.

In the Sample No. 1 taken from the River Tay it may be noted that Excretal Bacilli were present even in such a small quantity as ·1 cc. Unfortunately the number is not given. With reference to the other samples (from the Experimental Well) B. Coli were present in ·1 cc. of each. The number here again is not given, and it would have been of interest to have known the quantity of water in which B. Coli was absent, although in each case it is stated there was an absence of Excretal or Typical B. Coli in 50 c.c. This statement, however, is followed by the remark that B. Coli are practically all Atypical, which would naturally lead one to the conclusion some are Typical and are present in 50 cc.

C. PARKER STEWART.

Bacteriological Department,
Royal Infirmary,
GLASGOW, 26*th January*, 1926.

REPORT on the Bacteriological Examination of Two Specimens of Tay Water received from Dr. Parker Stewart on the 28th December, 1925.

No. 1. Sample from Moncreiffe Island filter before chlorination.
Total bacterial content—112 germs per cubic centimetre.
Total excremental coliform bacilli—1·4 per c.cm.

No. 2. Sample from Viewlands after chlorination, taken from Fire Station.
Total bacterial content—22 germs per c.cm.
Total excremental coliform bacilliary content—4 in 10 c.cm.

J. ARCHIBALD CAMPBELL, *Bacteriologist.*

20 Priory Road,
Bedford Park,
LONDON, W. 4., 11*th March*, 1926.

The Town Clerk,
City Chambers,
Perth.

Dear Sir,

PERTH WATER SUPPLY.

In accordance with your request, contained in the Memorandum dated 26th February, 1926, I now report on my views as to the Woody Islands Scheme for providing the City of Perth with a water supply.

On the 5th instant I visited the site of the proposed intake works opposite Woody Islands. I also inspected the two open service reservoirs and saw the positions of the two covered ones. Afterwards I went to the Pumping Station and to Moncreiffe Island to inspect the arrangements whereby the water from the River Tay is now abstracted for supply.

I collected three samples of water from the following places :—

a. River Tay near the upper end of the bank on which it is proposed to construct the new intake.

b. Culvert on Moncreiffe Island.

c. South Inch Public Well, representing the supply after chlorination.

The examination of these samples was commenced within two days of the time of collection, and the results are appended to this Report.

I have very carefully considered the various documents and reports submitted to me, and for additional information I am much indebted to the Lord Provost, the City Officials, Mr Duff (of Messrs Hunter, Duff & Middleton), and to other gentlemen I had the pleasure of meeting on the occasion of my visit to Perth.

My opinions are as follows :—

1. The River Tay, *with proper safeguards*, will furnish a satisfactory water supply for the city.

2. The sewage outfall is in dangerous proximity to the intake works on Moncreiffe Island and near Perth Bridge, and it is of the utmost importance that the place of abstraction should be moved further up the river.

3. The intake works at Moncreiffe Island although always described *as a filter cannot be regarded as such* according to modern views. Nevertheless the arrangement appears to function as a fairly efficient strainer for removing suspended matters from the water.

(My sample, collected from the culvert, was as clear as any mechanical filter would have rendered the water, and, as far as I could ascertain, turbid water has been rarely noticed, except at times when it could be attributed to disturbance of the corroded main in the river leading to the Pumping Station).

4. It appears to me that the proposed collecting culverts at the Woody Islands site would yield water as clear as that now obtained at Moncreiffe Island. (Any doubt on this point could be set at rest by making trial holes on both sites and comparing the nature of the stones, gravel and sand at the two places).

5. In spite of the unsatisfactory position of the present intake the city has enjoyed good health, except at times, which, according to my information, have followed work causing disturbance at the auxiliary intake above Perth Bridge.

6. The adoption of chlorination has improved the present supply, but it is essential that if moderate amounts of the sterilising agent are to be relied on, a time period of contact should be given. In this respect, a very weak point in the arrangements now obtaining is the fact that the main supplying the small Wellshill Reservoir has also to serve as a distributing main, and consequently water immediately after chlorination finds its way to consumers.

7. At present the dose of chlorine is constant (approximately 0·4 part per million), and although my examination of the sample taken on the 5th instant indicates that storage of the water for something under two days resulted in such a degree of sterilization that B. Coli could not be detected in 100 cubic centimetres, I am of opinion that the dose of the re-agent should be altered from time to time, depending on the proportion of organic matter in the water, which I am quite sure varies. (Simple tests for recording the colour

of the water, passing to the Pumping Station, could be devised so that this matter might be attended to).

8. The construction of a new reservoir at Viewlands will entirely get over the fault mentioned in paragraph 6. I would here refer to a matter concerning reservoirs which requires consideration, A reservoir may have a capacity representing, say, a week's storage, but if the point of entry is near the place of discharge the water short circuits, so that the supply does not experience the real benefit of storage. I would therefore recommend you to consult the engineers, so that any necessary alterations might be made to the reservoirs to reduce the short circuiting effect to a minimum.

9. In connection with the proposed improvement of the water supply, I have considered the alternatives of sterilization with chlorine and by the "excess lime" method, and have decided in favour of the former, for two reasons. In the first place, the experience of the past few years has been that *chlorine treatment* of the Tay water does not result in taste or smell troubles, and in the second place I find, from experiments, that the addition of lime, even in the proportion of 1 part per 100,000 to the Tay water would increase its colour by about 40 per cent.

10. As additional safeguards with reference to the proposed Woody Island Scheme, I would remind you that the position of the new intake is, according to the Ordnance sheets, near the limit of the effects of ordinary spring tides, and consequently the possibility of the sewage of Perth reaching that point is not entirely eliminated.

However, with the construction of the new service reservoir, continuous pumping would not be necessary, and therefore by consulting the tide tables your engineer could avoid abstracting water from the intake during the periods of very high tides.

11. Although I was unable to get definite information as to times when the River Tay was in flood with really turbid water, I can believe that there are such occasions. With the increased storage it should be possible to shut down pumping at times of turbid flood water, with advantage to the supply.

13. In conclusion, I have to say that I am of opinion that the proposed Woody Island Scheme (which includes moving the intake, improved storage and the provision of proper plant for

chlorinating the water) *provides sufficient safeguards* to ensure a safe and satisfactory water supply for the city of Perth, if the few minor points mentioned in this Report are dealt with.

Faithfully yours,

(Sgd.) WILLIAM T. BURGESS.

PERTH WATER SUPPLY.

Samples collected 5th March, 1926 :—

a. River Tay near site of the proposed Woody Island Intake.

b. Water from culvert on Moncreiffe Island.

c. South Inch Public Well, representing supply after chlorination.

RESULTS OF ANALYSIS EXPRESSED IN PARTS PER 100,000.

	A.	*B.*	*C.*
Total Solid Residue, ...	4·74	5·46	5·30
Ammonia, Free, ...	·001	·001	·0005
Ammonia, Albuminoid, ...	·005	·006	·0035
Nitrogen as Nitrates, ...	·019	·039	·034
Nitrogen as Nitrites, ...	0	0	0
"Oxygen Absorbed" in 4 hrs. at 26·7 C., ...	·232	·123	·115
Chlorine (Combined), ...	0·40	0·55	0·55
" Alkalinity," calculated as Carbonate of Lime, ...	1·1	1·3	1·4
Total Hardness (by Soap Test), ...	1·8	2·2	2·2
	Very Slightly Turbid.	Clear.	Clear.
Relative Colour, ...	58	25	24

BACTERIOLOGICAL RESULTS.

Total Organisms capable of growing on Gelatine Medium in 4 days at 20 C. Number per Cubic Centimetre, ...	1180	256	3
Organisms capable of growing on Agar Medium in 24 hours at bloodheat. Number per Cubic Centimetre, ...	34	4	0
Presumptive Tests for B. Coli. MacConkey's Bile-Salt Lactose Medium, present in	0·1 c.c.	10 c.c.	Not Present in 100 c.cms.

(Sgd.) WILLIAM T. BURGESS,
11*th March*, 1926.

My views on the water supply of Perth and the remedies which might be adopted to ensure a safe supply have been expressed in previous Reports, reference being made in the 1922 Report to the effect of chlorination and storage.

It must be admitted that great improvements have taken place in the purification of water by these two methods mentioned, and we have in a humble way been carrying on this chlorination process with a result of considerable diminution in the number of bacteria. According to Dr. Campbell's Report of January the total excremental B. Coli content was 4 in 10 c.c., while in the Report of Mr. Burgess in March the results to me are almost incredible and border on perfection, B. Coli not being present in 100 c.c. The latter result would satisfy all authorities, but as these examinations were made in wintry weather, and in view of Sir Alexander Houston's statement that the Perth water might be difficult to chlorinate, it might be well to learn if this satisfactory condition obtains in the hot season, and I would suggest the periodic bacteriological examination of the chlorinated water throughout the summer.

Notwithstanding, my views of the Gravitation Scheme of Loch Ordie *v.* River Tay given before the Royal Commission hold good, and with such water facilities at Perth's door I see no reason yet to alter them, and given the choice of choosing between the gravitation supply, even at a reasonably higher cost, and a chemically treated contaminated river supply, I would prefer the former.

In the scheme now adopted it must be admitted that at the proposed intake the impurity is less than that at the present intake, more particularly when the tide is up, but the question which raises itself on the ground of economy is—Assuming chlorination to be so effective, as gathered from the last Report, would there be any difference to the safety of the public health between water taken at the present intakes only when the tide is down and water taken from the Woody Island? If the answer is in the negative, then, with every regard for sentiment, it appears a big figure to pay in order to remove our intake further away from the sewer outfall, and yet have it at times under the tidal influence.

VACCINATION (SCOTLAND) ACT, 1907.

Return of Statutory Declarations of Conscientious Objection delivered to the Registrar.

It will be noted from the table given below how, for a period of years, advantage was taken of the Conscientious Objection to vaccination, reaching a maximum in 1917 with a percentage of 34·8 unvaccinated. From that date the percentage gradually declined until 1920 to 21·2, but from that time to 1924 has steadily increased. This year shows an improvement, but I would like to see this percentage reduced to the figure of 1907, as I fear the greater the accumulation of unvaccinated children, the greater will be the epidemic should Smallpox get a foothold in the city.

Year.	No. of Births.	No. of Unvaccinated.	Percentage of Unvaccinated.
1907	802	3	·3
1908	794	57	7·1
1909	805	92	11·4
1910	786	148	18·8
1911	760	163	21·4
1912	791	184	23·2
1913	711	209	29·3
1914	727	194	26 6
1915	644	213	33·0
1916	685	229	33·4
1917	516	180	34·8
1918	477	119	25·0
1919	614	144	23·4
1920	844	180	21 2
1921	646	145	22·4
1922	691	164	23·7
1923	704	174	24 7
1924	597	155	25 9
1925	562	124	22·1

SLAUGHTER-HOUSE.

The Slaughter House was visited by me on one or two occasions during the year in order to ascertain the general sanitary conditions, and it can be reported that the premises were kept in satisfactory order. The gut-house, to which I have in previous Reports drawn attention, is in my opinion far from ideal, and an improvement in space, lighting and ventilation, would be beneficial to the workers concerned.

Formerly my duties also included inspection of all carcases to which the Superintendent had taken exception, but these now fall to be carried out by Mr. Brown, V.S., who was appointed for the purpose of section 43 of the Public Health (Scotland) Act, 1897, on the terms stated in a previous report.

During the year Mr. Brown was called by the Superintendent on 14 occasions, and the results of his examinations are included in the return below.

The number of animals slaughtered in 1925 was—

Cattle, ...	3581,	of which	44	were unfit.
Sheep, ...	22,642,	,,	60	,,
Pigs (including Pigs slaughtered at Bacon Factory), ...	4426,	,,	18	,,
Calves, ...	107,	,,	5	,,

The weight of the condemned material was—Beef, 16,604 lbs.; Mutton, 1,807 lbs.; Pork, 1,242 lbs.; Veal, 324 lbs.